Color image RUNNER C2050/2020 iR C2100/2100S SERVICE HANDBOOK

REVISION 0

Canon

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Application

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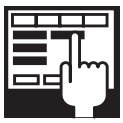
Caution

Use of this manual should be strictly supervised to avoid disclosure of confidential information.

1 Symbols Used

This documentation uses the following symbols to indicate special information:

Symbol	Description
	Indicates an item of a non-specific nature, possibly classified as Note, Caution, or Warning.
	Indicates an item requiring care to avoid electric shocks.
	Indicates an item requiring care to avoid combustion (fire).
	Indicates an item prohibiting disassembly to avoid electric shocks or problems.
	Indicates an item requiring disconnection of the power plug from the electric outlet.
	Indicates an item intended to provide notes assisting the understanding of the topic in question.
	Indicates an item of reference assisting the understanding of the topic in question.
	Provides a description of a service mode.
	Provides a description of the nature of an error indication.
	Refers to the Copier Basics Series for a better understanding of the contents.

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Reader Unit (copier operation) SERVICE HANDBOOK

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CHAPTER 1 MAINTENANCE AND INSPECTION

1 Periodically Replaced Parts

The machine does not have parts which require replacement on a periodical bias.

2 Consumables and Durables

As of May 2000

No.	Part name	Part No.	Q'ty	Life (prints)	Remarks
1	Scanning lamp	FH7-3336	1	500 hr	Reference is to 75,000 scans: for replacement work, see No. 1; for alarm, see Note 2.

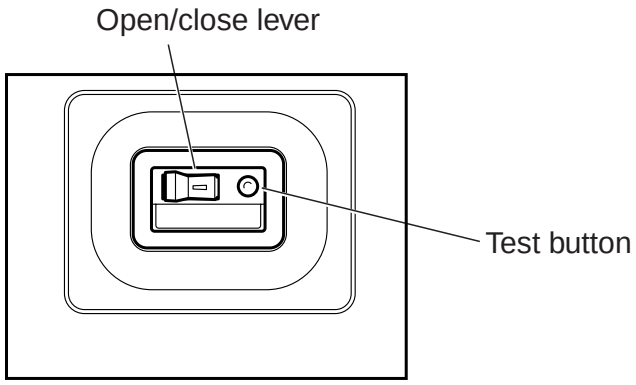
Replace the scanning lamp as instructed in 2.3.2 "After Replacing the Scanning Lamp" in Chapter 8.

3 Scheduled Servicing

1. As a rule, perform scheduled servicing every 50,000 prints.
2. Check the Service Book before leaving for scheduled servicing, and take parts for expected replacement.

1) Report to the person in charge, and check the general condition.
2) Record the counter reading, and check the faulty copies.
3) Make test prints in Direct, Reduce, and Enlarge; then, check the following:
    a. Images
    b. Background for soiling
    c. Leading edge margin (2.5 ± 1.5 as standard in Direct)
    d. Left margin (2.0 ± 1.5 mm as standard in Direct)
    e. Fixing, registration, and back for soiling
    f. Abnormal noise
4) Perform scheduled servicing according to the number of prints made (Scheduled Servicing Chart of this chapter and in Chapter 11 of the Printer Manual).
5) Clean any soiled areas inside the machine.
6) Make test prints.
7) Execute auto gradation correction in user mode.
8) Make sample copies.

9) Press the test button of the leakage breaker for the reader unit and the printer, and check to see that the open/close lever shifts to the OFF side.
Thereafter, turn off the power switch, and shift the lever to the ON side; then, turn on the power switch.
If the lever fails to shift to the OFF side, replace he leakage breaker; after replacement, make the foregoing check.



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10) Put the sample copies away, and clean up the area around the machine.
11) Record the final counter reading.
12) Fill out the Service Book, and report to the person in charge. Be sure to indicate the check made on the leakage breaker in the history column.

4 Scheduled Servicing Chart

Do not use solvents or oils not indicated.

△: Clean ●: Replace ×: Lubricate □: Adjust ◎: Inspect

As of May 2000

Unit	Part	Internals (prints) every 50,000	every 100,000	every 150,000	every 300,000	Others	Remarks
Externals/ controls	Copyboard glass					△	As necessary
	Copyboard cover					△	As necessary
Scanner	Rail					△ ×	Upon replacement of scanning lamp Clean; then, apply silicone oil
Optical unit	Mirror (No. 1 to No 3)					△	As necessary
	Reflecting shade					△	As necessary
	Standard white plate					△	As necessary

CHAPTER 2 STANDARDS AND ADJUSTMENTS

1 Adjusting the Image Position

1.1 Standards

See 1 “Adjusting the Image Position” in Chapter 2 of the Printer Handbook.

1.2 Checking the Image Position

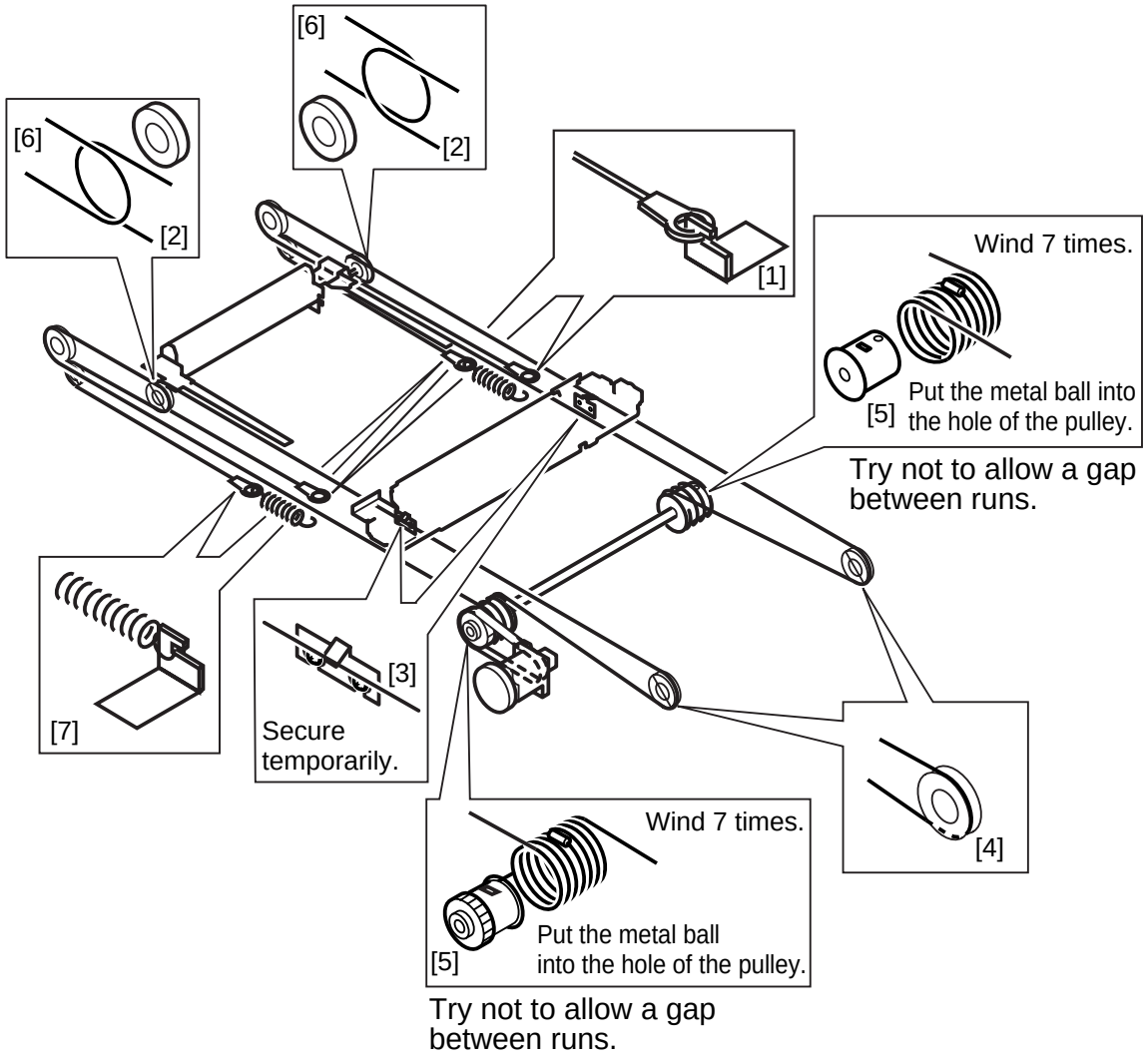
See 1 “Adjusting the Image Position” in Chapter 2 of the Printer Handbook.

2 Making Scanner-Related Adjustments

2.1 Routing the Scanner Drive Cable

Go through steps [1] through [7] to route the scanner cable on the pulleys and hooks:

1. Check to make sure that the scanner drive cable is free of twists and it has not ridden over the pulleys.
2. Try moving the No. 1/No. 2 mirror bases by hand to find out if they move smoothly; at that time, do not touch the reflecting plate.
3. Take care not to damage the cable by the edge of the metal plate.



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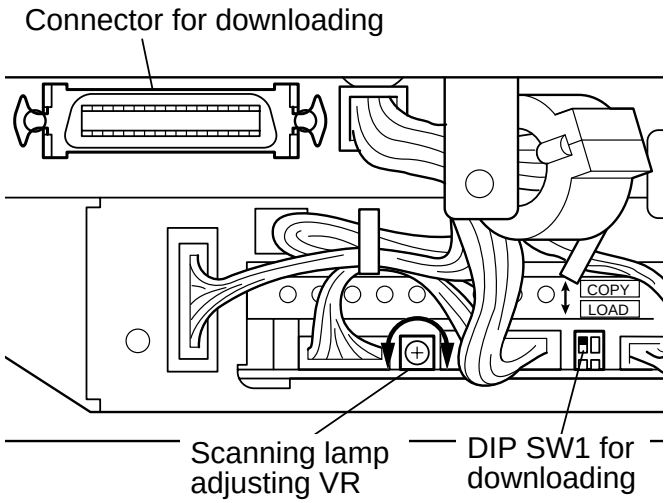
2.2 Adjusting the Intensity of the Scanning Lamp

1) Connect the power plug, and turn on the main power switch.
2) Remove the reader unit front lower cover.
3) Wait until the machine enters standby state (i.e., until the Start key turns on green; in about 5 min).
4) Turn the scanning lamp adjusting VR fully counterclockwise as shown.



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5-1)If the lamp is new (as when replacing the existing one), make the following selec tions in service mode, and press the OK key: COPIER>FUNCTION>MISC-R>LAMP-ADJ. (The indication will be ‘SERVICE’.)

5-2)If the lamp is old, make the following selections in service mode, and press the OK key: COPIER>FUNCTION>MISC-R>USE-LAMP. (The indication will be ‘SERVICE’.)

6) See that the scanning lamp turns on; then, wait for about 5 min (for the scanning lamp to warm up), and turn the scanning lamp adjusting VR clockwise until a beep is heard.
7) Press the OK key on the control panel screen. (The indication will be ‘READY’.)
8) Execute the following in service mode: FUNCTION>CCD>CCD-ADJ.

2.3 After Replacing the Scanning Lamp

1) Replace the scanning lamp with a new one, and put the machine back into its initial condition. (Keep the reader unit front lower cover removed.)
2) Execute adjustment of the scanning lamp intensity.
3) Mount the reader unit front lower cover.
4) Make the following selections in service mode: COPIER>ADJUST>PASCAL; then, set '0' to <P-OFST-Y/M/C/K>.
5) Execute auto gradation correction in user mode.

2.4 Mounting Back the Existing Scanning Lamp

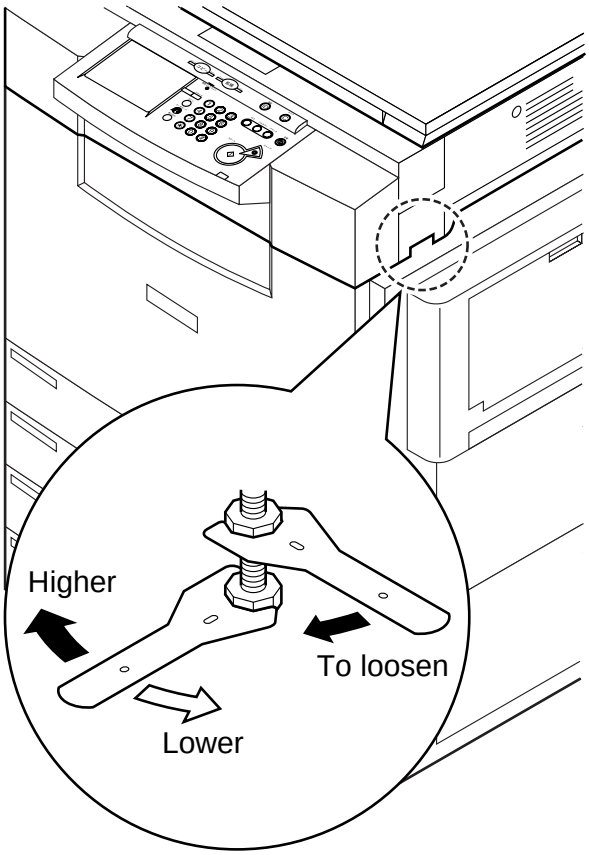
If the scanning lamp has been removed, be sure to go through the following after mounting it back:

1) Mount the scanning lamp, and put the machine back into its initial condition. (Keep the reader unit front lower cover removed.)
2) Execute adjustment of the scanning lamp intensity.
3) Mount the reader unit front lower cover.
4) Execute auto gradation correction in user mode.

2.5 Keeping the Reader Unit Level

If the reader unit rocks on the printer unit, go through the following steps:

1) Using a wrench, loosen the fixing screw (top) of the front right foot of the reader unit.

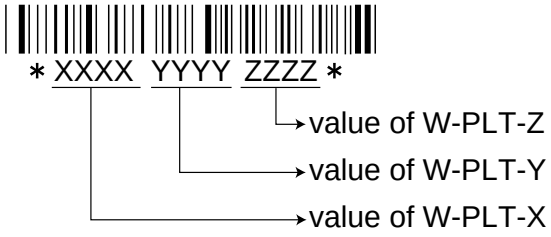


F02-205-01

2) Using a wrench, turn the adjusting screw (bottom) of the front right foot until the reader unit stops rocking.
3) Tighten the fixing screws to end the work.

2.6 After Replacing the Standard White Plate

1) Open the COPIER>ADJUST>CCD screen in service mode.
2) Enter the value indicated on the new standard white plate in service mode, and press the OK key: COPIER>ADJUST>CCD>W-PLT-X, W-PLT-Y, W-PLT-Z.



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3) Turn off the main power switch, and mount the new standard white plate.
4) Turn on the main power switch.
5) Execute auto gradation correction in user mode.

3 Adjusting Other Electrical Parts

3.1 When Replacing the CCD Unit

1) Remove the reader unit front lower cover.
2) Record the values (AL-RG, AL-GB; indicated on the label attached to the new CCD unit) on the service label on the reader unit front lower cover.
3) Mount the new CCD unit.
4) Put the machine back into its initial condition. (Keep the reader unit front lower cover removed.)
5) Connect the power plug, and turn on the main power switch.
6) Make the following selections in service mode, and enter the values recorded in step 2): ADJUST>CCD>AL-RG/AL-GB.

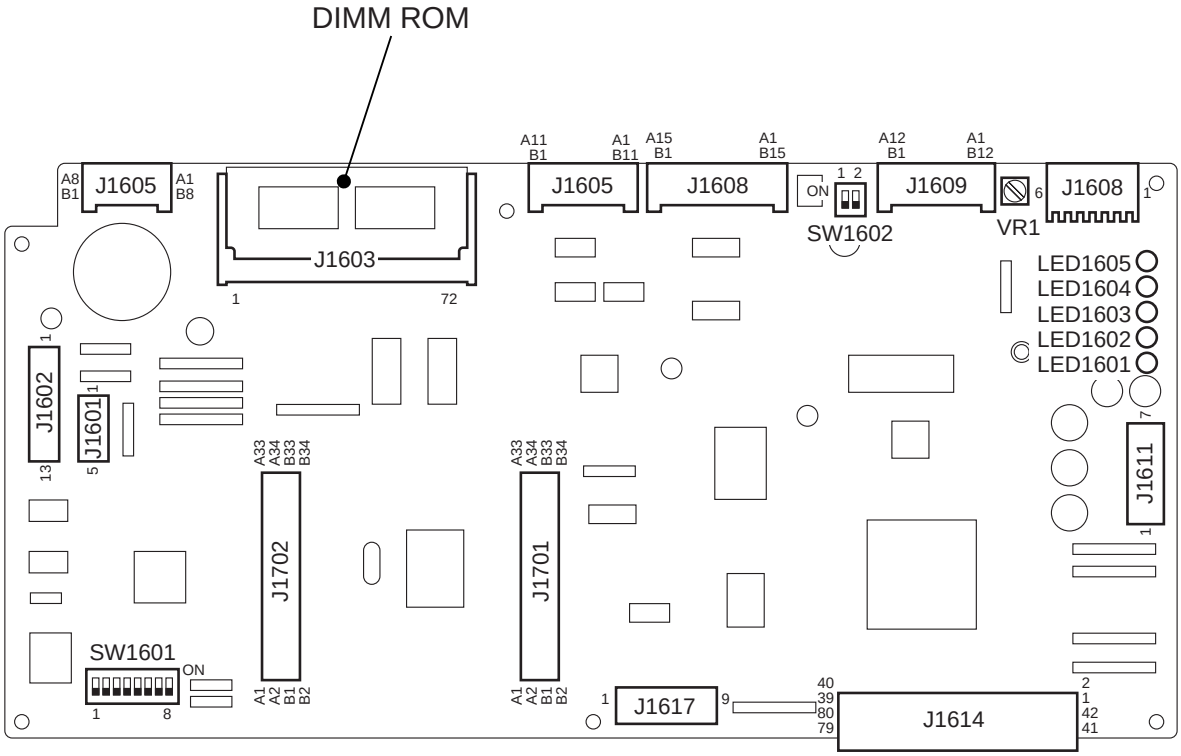
Memo

The values other than AL-RG and AL-GB (e.g., A-RG, A-GB) are unique to the reader unit, and need not be entered.

7) Execute adjustment of the scanning lamp light intensity.
8) Mount the reader unit front lower cover.
9) Make the following selections in service mode: COPIER>ADJUST>PASCAL; then, set '0' to <P-OFST-Y/M/C/K>.
10) Execute auto gradation correction in user mode.

3.2 When Replacing the Reader Controller PCB

1) Remove the reader unit front lower cover.
2) Check to see if all items of the service label found on the reader unit front lower cover have values indicated; otherwise, start service mode, and record the missing values.
3) Remove the faulty reader controller PCB.
4) Mount the new reader controller PCB.
5) Detach the DIMM ROM from the faulty reader controller PCB, and attach it to the new reader controller PCB.



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When using a new DIMM ROM, be sure to upgrade the DIMM ROMs of the reader controller PCB, the DC controller PCB, and system controller PCB to make sure that their versions will match.

6) Put the machine back into its initial state. (Keep the reader unit front lower cover removed.)
7) Connect the power plug, and turn on the main power switch.
8) Execute FUNCTION>CLEAR-R-CON in service mode. At the end of the mode, the power will automatically turn off.
9) Turn on the main power.
10) Enter the values of all items indicated on the service label attached to the reader unit front lower cover.

In particular, the wrong setting of OPTION>BODY>EC-GLASS (indicating the type of copyboard glass, i.e., the use of an EC coat) will affect the hues of images. Pay extra attention.

11) Execute adjustment of the scanning lamp light intensity.
12) Mount the reader unit front lower cover.
13) Execute auto gradation correction in user mode.
14) Execute head shading in user mode.

3.3 When Replacing the AP-IP PCB

There is no particular work to perform for replacement.

FUNCTION>CCD>CCD-ADJ is automatically executed at power-on.

3.4 When Replacing the ECO PCB

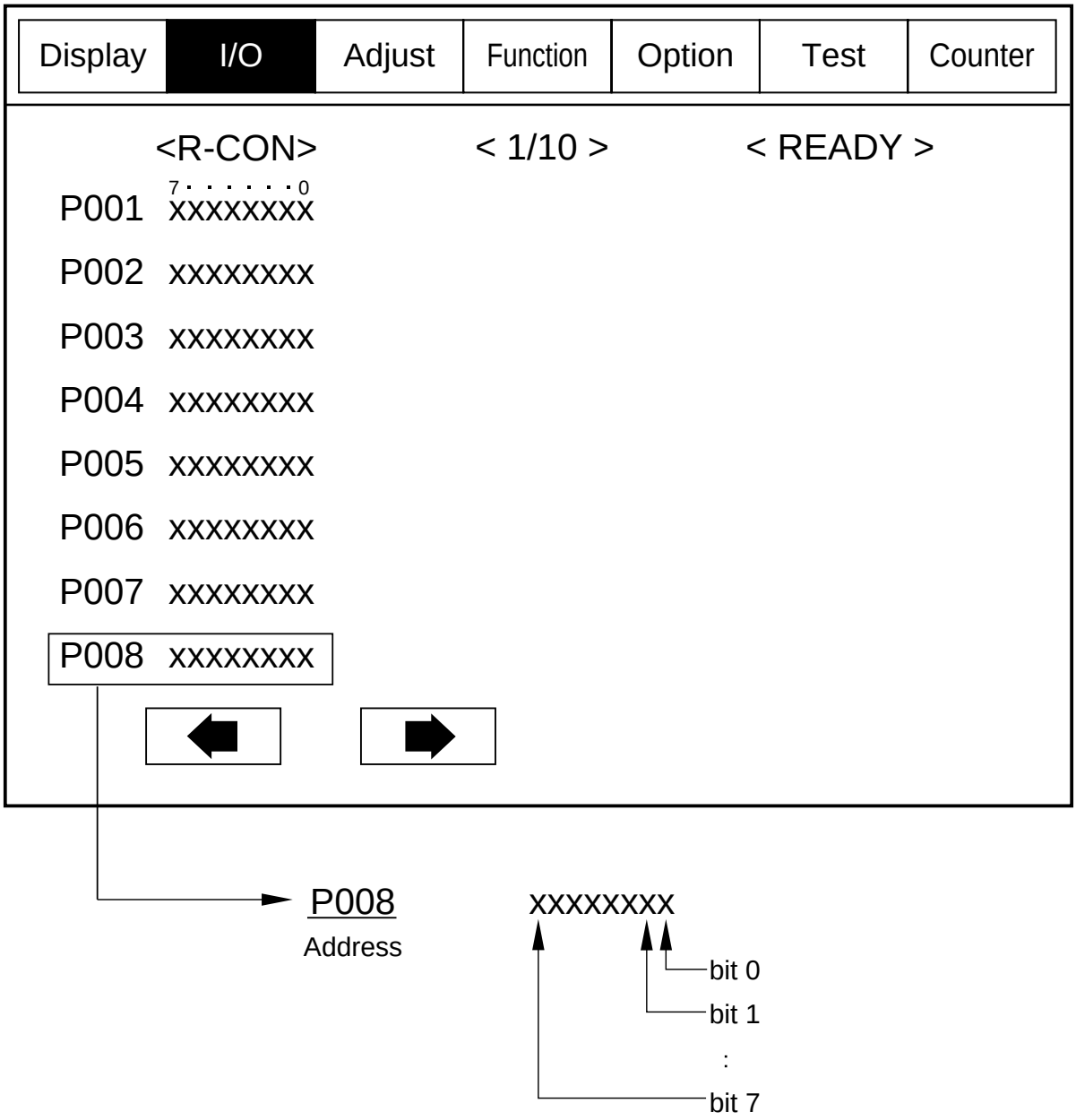
There is no particular work to perform for replacement.

3.5 When Replacing the Light Intensity Detection PCB

1) Mount the new light intensity detection PCB, and put the machine back into its initial condition. (Keep the reader unit front lower cover removed.)
2) Execute adjustment of the scanning lamp light intensity.
3) Mount the reader unit front lower cover.
4) Execute auto gradation correction in user mode.

4 Checking the Photointerrupters

1) Start service mode.
2) Make the following selections to bring up the following screen: COPIER>I/O>R-CON.
3) Make checks as indicated:



F02-400-01

Notation	PS101	PS102
Name	Scanner home position sensor	Copyboard cover open/ closed sensor
Service mode	Display>Sensor>SC-HP	R-CON, P004 bit 0
Checks (normal if as described)	A press on the Start key will cause the following changes:‘1’ --> ‘0’ --> ‘1’	During standby, when the copyboard cover is •opened, ‘0’. •closed, ‘1’.

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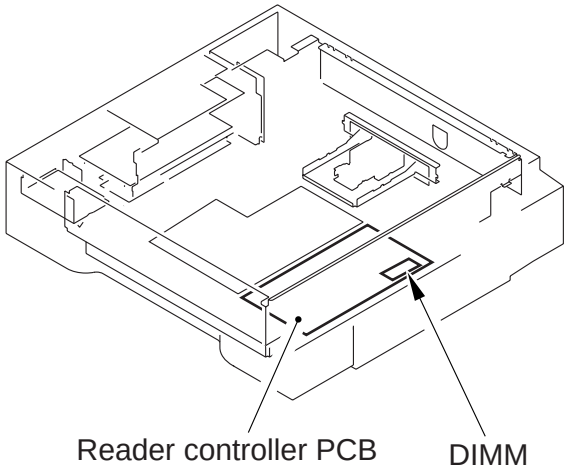
5 Upgrading the Machine

The machine may be upgraded by either of the following two methods:
[1] by replacing the DIMM on the rear controller PCB
[2] updating the contents of the DIMM by downloading from a PCB

5.1 Replacing the DIMM

The DIMM is mounted in the following location of the machine:



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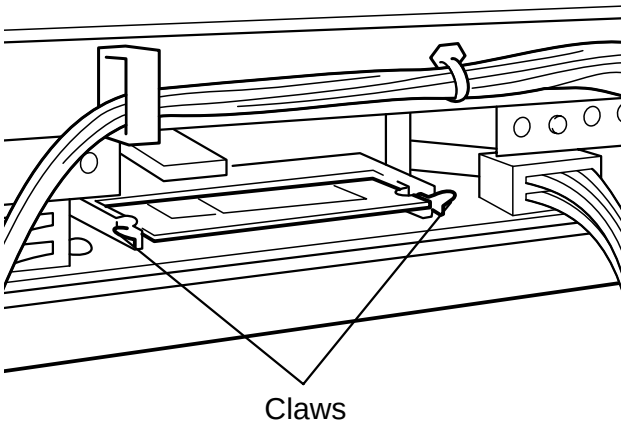
5.1.1 Removing the DIMM from the Reader Controller PCB

1) Turn off the main power switch, and disconnect the power cord from the power outlet.
2) Remove the front lower cover.
3) Remove the scanner motor drive PCB.
4) While spreading open the claws of the slot, lift the DIMM to detach.



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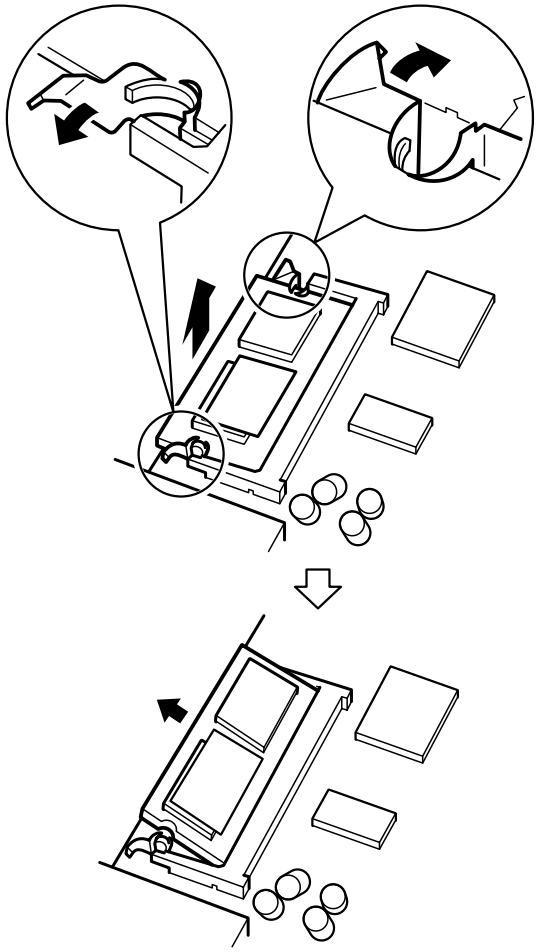

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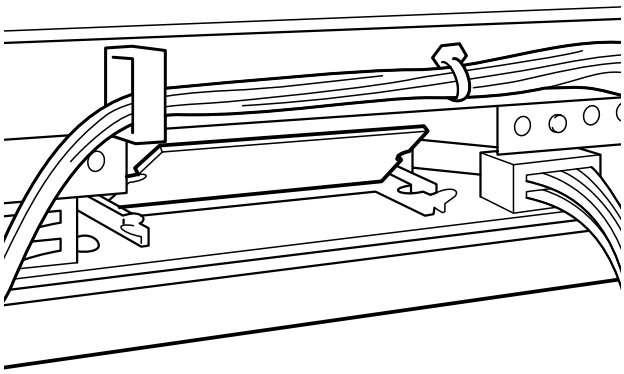
5.1.2 Mounting the DIMM on the Reader Controller PCB

1) Insert the DIMM into the slot at an angle.



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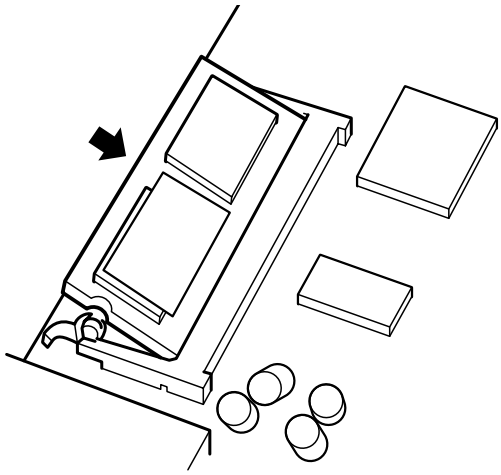

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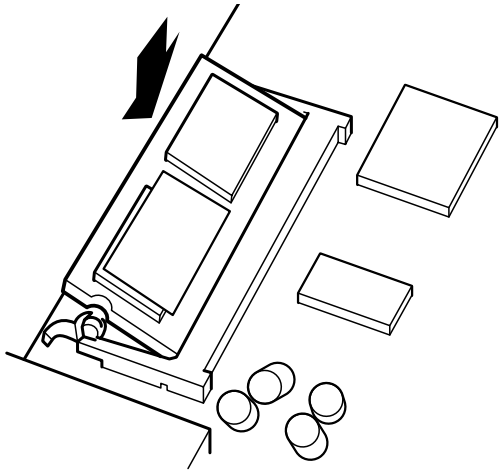
2) Shift down the DIMM.



F02-501-06

The DIMM may crack. Do not force it.

After replacing the DIMM, go through the following:
1. initializing the RAM: COPIER>FUNCTION>CLEAR>R-CON.
2. turning off and then on the main power switch.
3. entering the values indicated on the service label.
4. turning off and then on the power switch.
5. executing auto gradation correction in user mode.
6. executing head shading correction in user mode.

When replacing with a new DIMM ROM, be sure to upgrade the DIMM ROMs of the reader controller PCB, DC controller PCB, and system controller PCB to ensure that their versions will match.

5.2 Downloading

5.2.1 Making Preparations

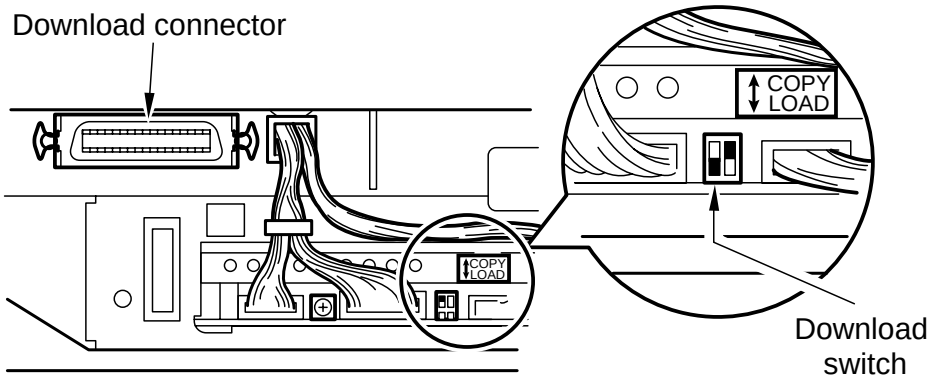
Prepare the following:
- PC to which the Copier Service Tool has been installed
- bi-Centronics cable (showing the notation “IEEE 1284 std-compliant”)

5.2.2 Downloading Procedure

a. Making Connections

1) Turn off the machine’s main power switch, and disconnect the power plug from the power outlet.
2) Remove the front lower cover.
3) Connect the connector for downloading and the PC with the bi-Centronics cable.
   - Keep the PC off.
   - Connect the 25-pin connector of the bi-Centronics cable to the PC and its 36-pin connector to the reader unit.

4) Slide the download switch to the LOAD side.

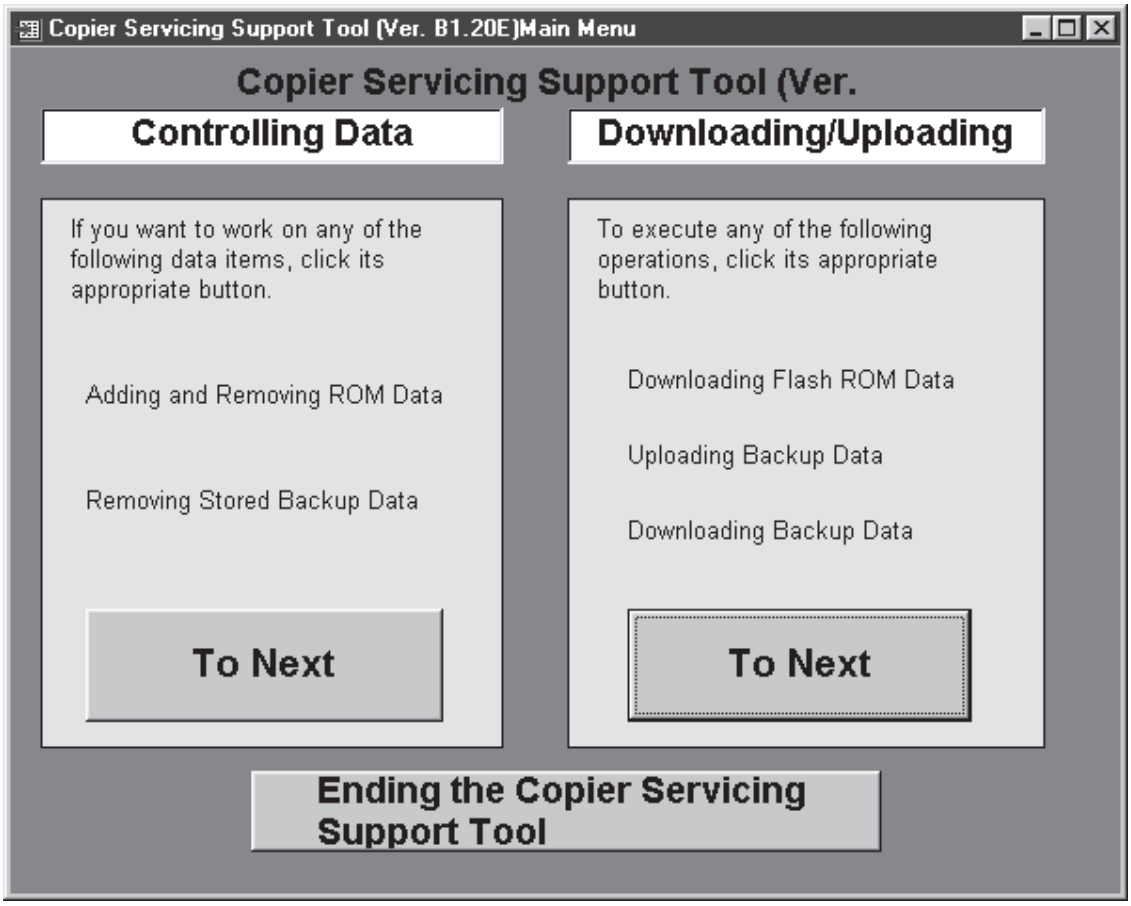


F02-502-01

5) Turn on the PC, and start up the Copier Service Support Tool.
6) Connect the machine's power plug to the power outlet, and turn on the main power switch:
   • reader unit power lamp: ON
   • control panel display: OFF
   • printer unit: normal power-up operation

b. Downloading Procedure

1) Select ‘to main menu’ on the start-up message of the Copier Service Support Tool.
2) Select ‘next’ on the ‘download/upload’ side.


Copier Servicing Support Tool (Ver. B1.20E)Main Menu
Copier Servicing Support Tool (Ver.
Controlling Data
Downloading/Uploading
If you want to work on any of the following data items, click its appropriate button.
Adding and Removing ROM Data
Removing Stored Backup Data
To Next
To execute any of the following operations, click its appropriate button.
Downloading Flash ROM Data
Uploading Backup Data
Downloading Backup Data
To Next
Ending the Copier Servicing Support Tool

F02-502-02

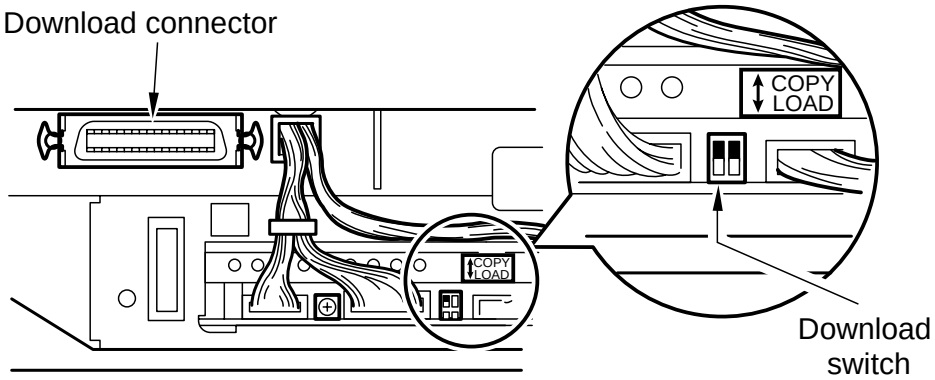
3) Select the type and PCB for downloading, and click ‘start to connect’.
   R-CON: DIMM for reader controller PCB
4) Follow the instructions on the PC screen to download the flash ROM data.

Do not turn off the machine or the PCB; otherwise, the DIMM can go out of order, and become unusable.

5) When downloading has ended, turn off the PC as follows:
   ‘OK’ —> ‘to main menu’ —> ‘end copier service support tool’ —> ‘end’

c. Following Up on the Work

1) Turn off the machine’s main power switch, and disconnect the power plug.
2) Disconnect the bi-Centronics cable from the reader unit.
3) Shift the download switch to the COPY side.



F02-502-03

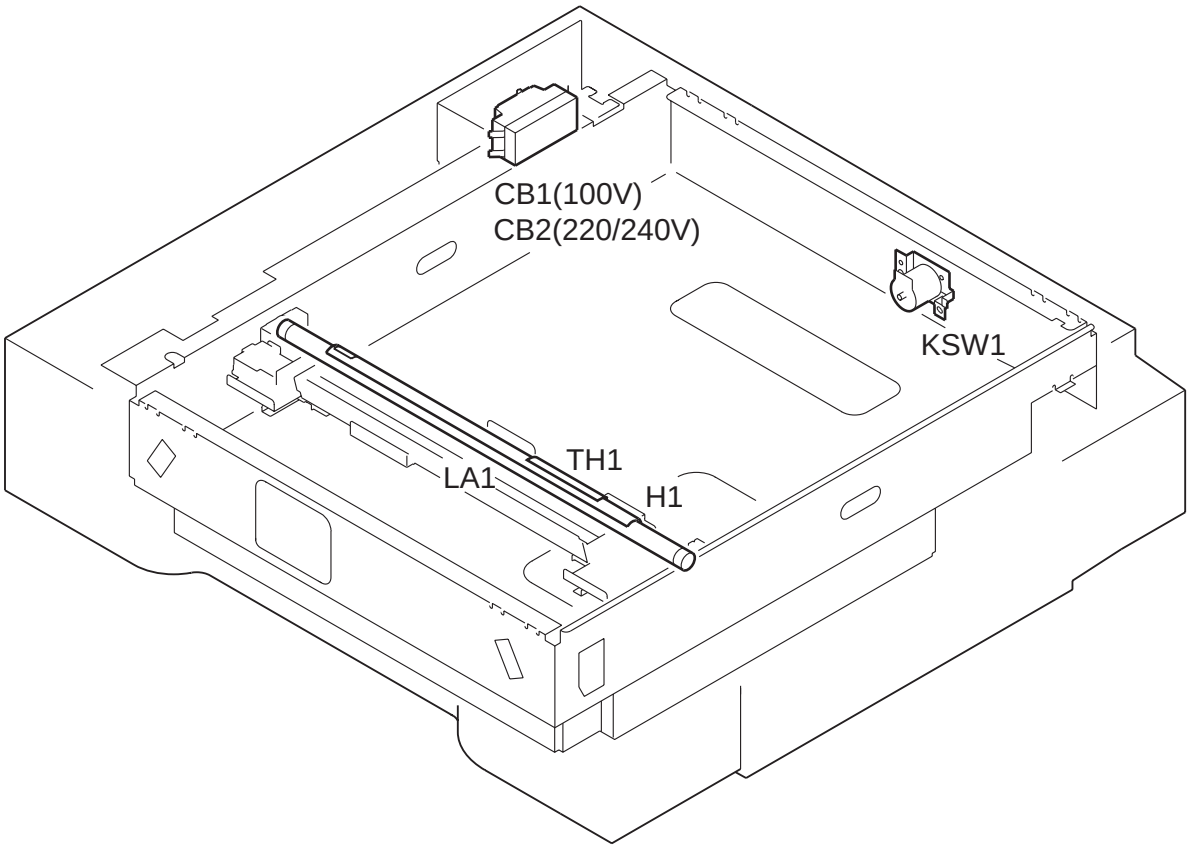
4) Connect the machine’s power plug to the power outlet, and turn on the main power switch.
5) Start service mode, and check the ROM version.
   • COPIER>DISPLAY>VERSION>R-CON
6) After the check, mount the front lower cover.

After downloading, be sure to perform the following:
1. initializing the RAM: COPIER>FUNCTION>CLEAR>R-CON
2. turning off and then on the main power switch
3. entering the values indicated on the service label
4 turning off and then on the power switch
5. executing auto gradation correction in user mode
6. executing head shading correction in user mode

When upgrading the DIMM ROM, be sure also to upgrade the DIMM ROMs of the reader controller PCB, DC control PCB, and system controller PCB to ensure that their versions will match.

CHAPTER 3 ARRANGEMENT AND FUNCTIONS OF ELECTRICAL PARTS

Lamp, Switch, Breaker, and the Like

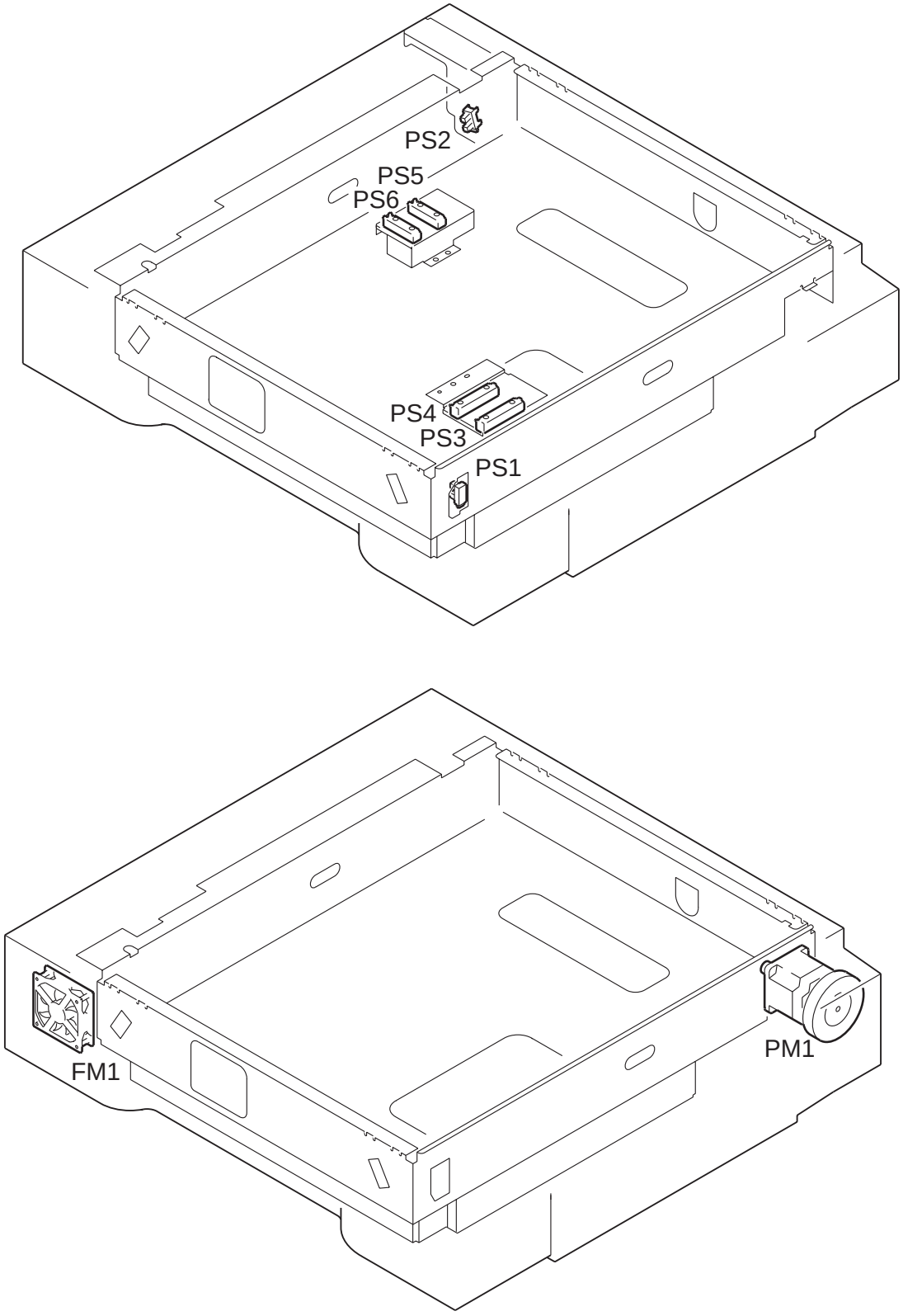


F03-000-01

Name	Notation	Description
Thermistor	TH1	Scanning lamp thermistor
Lamp	LA1	Scanning lamp
Heater	H1	Scanning lamp heater
Relay	RL1	Power-cut relay
Leakage breaker	CB	Leakage breaker
Switch	MSW1	Reader unit rear power switch
	KSW1	Key switch

T03-000-01

Sensors, Fans, and Motors

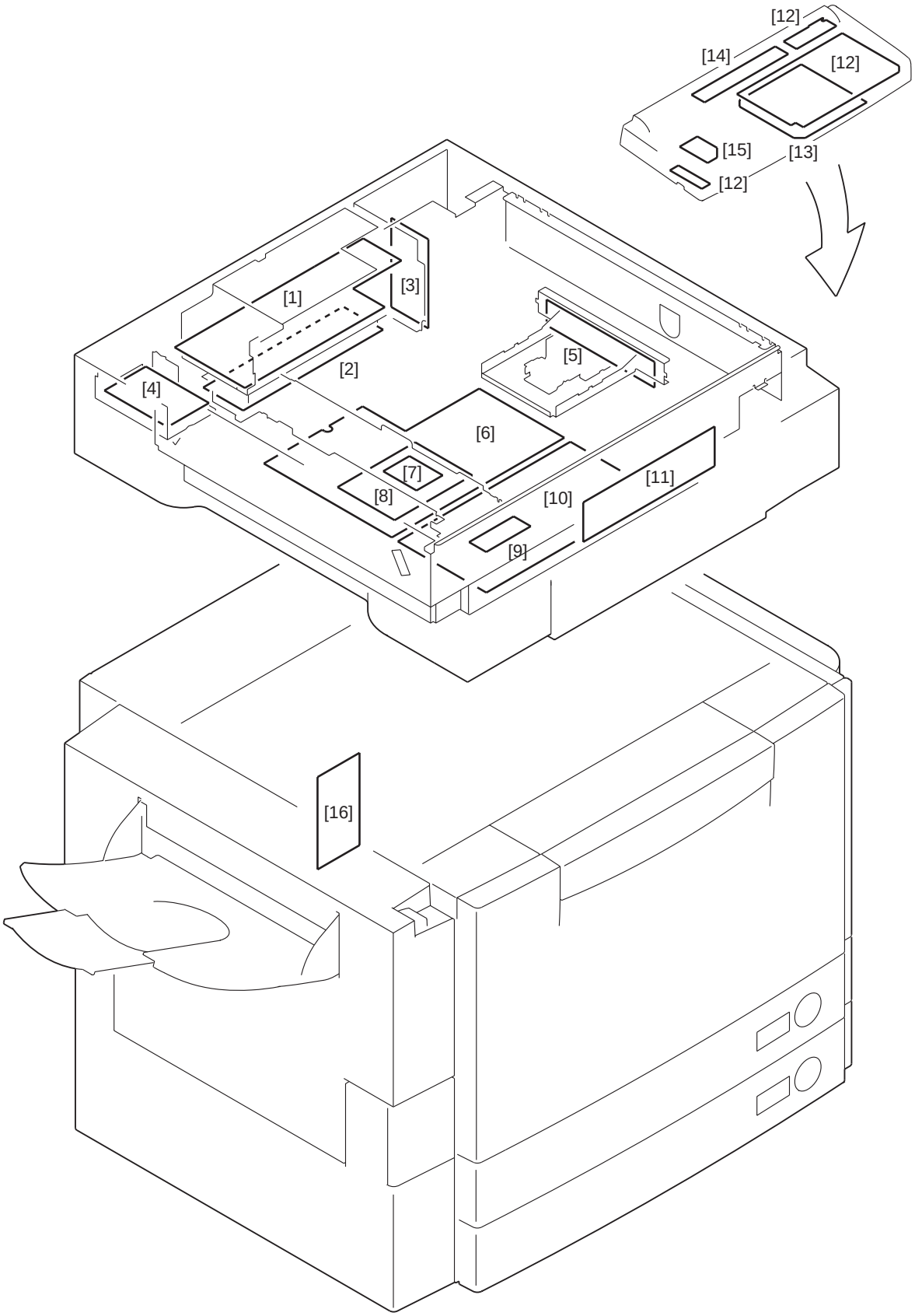


F03-000-02

Name	Notation	Description
Photosensor	PS1	Scanner home position sensor
	PS2	Copyboard cover open/closed sensor
	PS3	Original size sensor 0
	PS4	Original size sensor 1
	PS5	Original size sensor 2
	PS6	Original size sensor 3
Fan	FM1	Power supply cooling fan
Motor	PM1	Scanner motor

T03-000-02

PCBs



F03-000-03

Ref.	Name	Description
[1]	Reader unit main power supply PCB	Supplies power to the reader unit.
[2]	Inverter PCB	Drives the scanning lamp.
[3]	Noise filter PCB	Removes noise coming from the power line.
[4]	Accessories power supply PCB	Supplies power to accessories.
[5]	CCD/CCD driver PCB	Drives the CCD.
[6]	AP-IP PCB	Controls analog/digital image processing.
[7]	Light intensity detection PCB	Detects the intensity of light of the scanning lamp.
[8]	ECO PCB	Processes digital images.
[9]	Connector relay PCB	Relays signal lines.
[10]	Reader controller PCB	Controls sequence of the reader unit.
[11]	Original scanner motor driver PCB	Controls the drive of the scanner motor.
[12]	Keypad PCB	Controls the keypad.
[13]	Control panel CPU PCB	Controls sequence of the control panel.
[14]	Control panel LED PCB	Controls the LEDs.
[15]	Control panel inverter PCB	Controls the display.
[16]	RD I/F PCB	Interfaces the reader and the printer.

T03-000-03

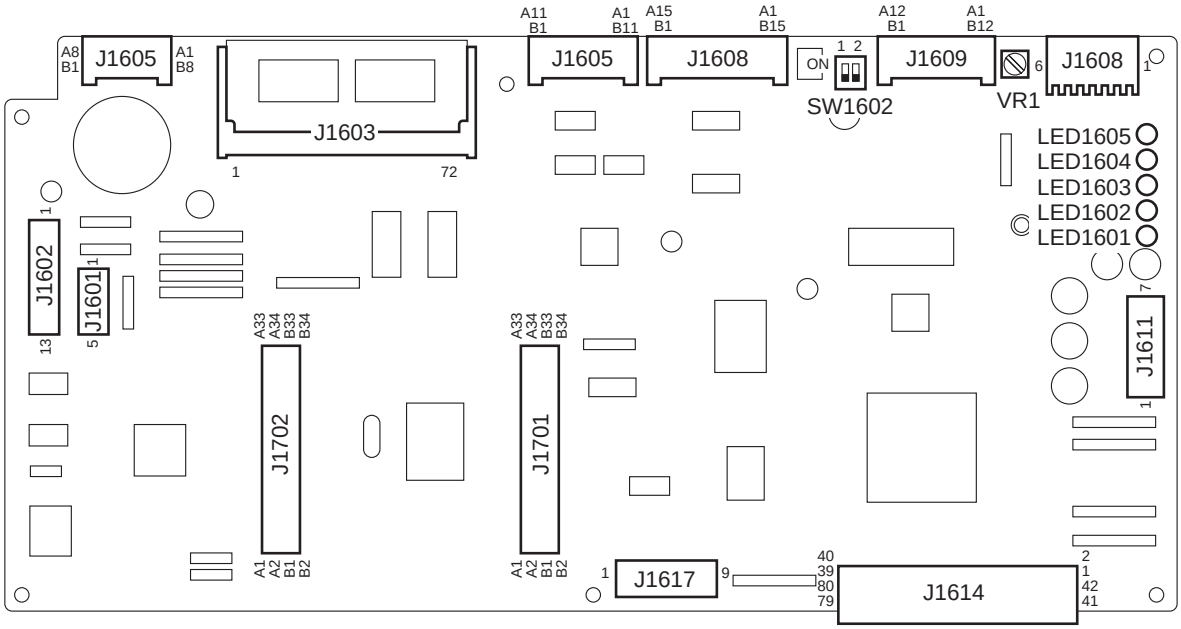
1 Variable Resistors, Light-Emitting Diodes, and Check Pins by PCB

Of the variable resistors (VR), light-emitting diodes (LED), and check pins used in the machine, those that are used in the field are discussed.

The VRs and check pins not listed are for use at the factory. Do not touch them in the field, as they require special tools and high accuracy.

1. Some LEDs hold leakage current, and emit dim light even when off; this is a normal condition, and must be kept in mind.
2. VRs that may be used in the field
   VRs that must not be used in the field.

a. Reader Controller PCB



F03-100-01

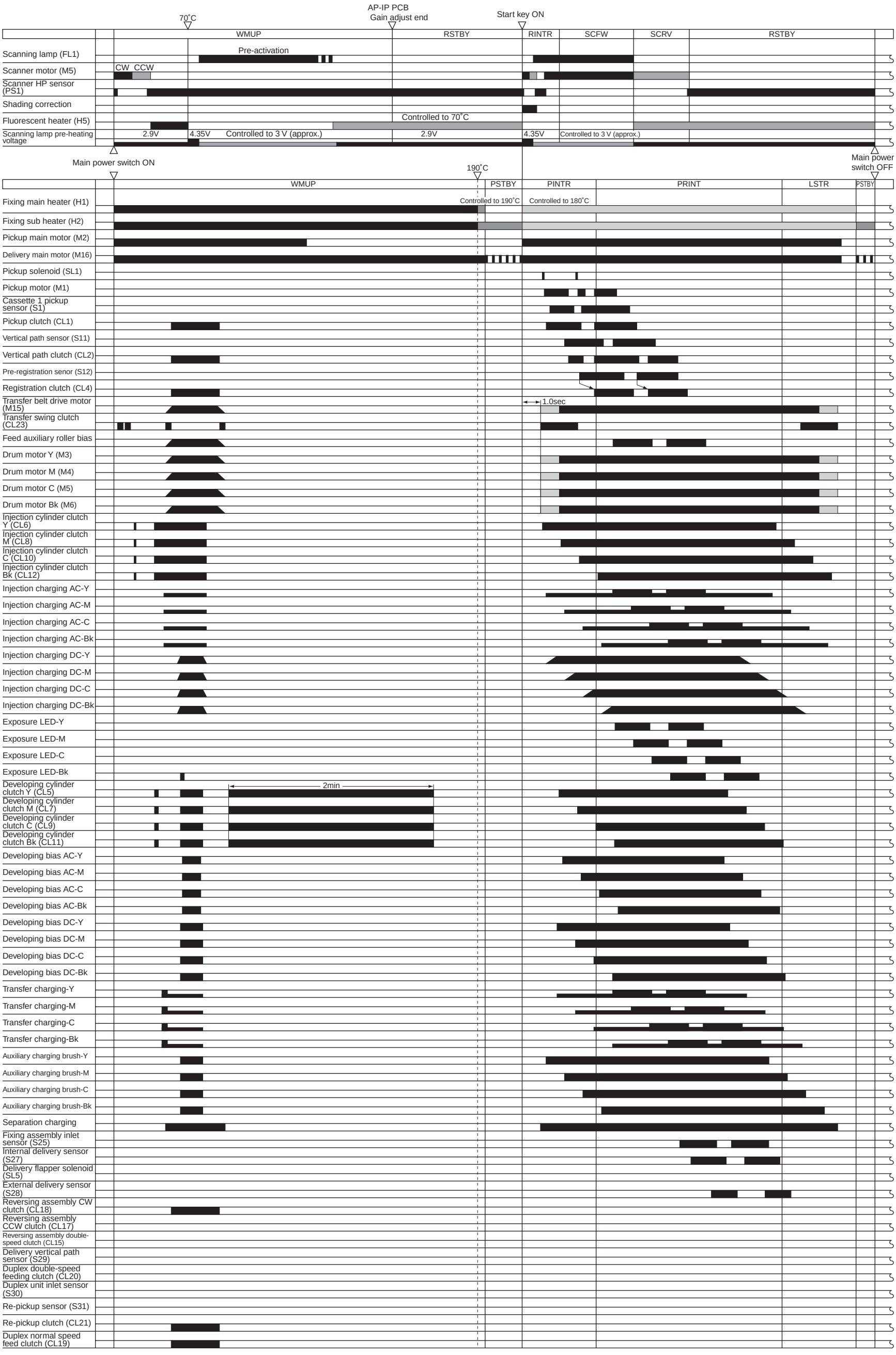
Notation	Name	Description
VR1601	Scanning lamp adjusting VR	Used when replacing the scanning lamp, light detection PCB, or standard white plate.
SW1602	Download DIP SW	SW-1 at ON (COPY): normal copying mode SW-1 at OFF (LOAD): download mode Caution: Do not to touch SW-2; it is for use at the factory.

T03-100-01

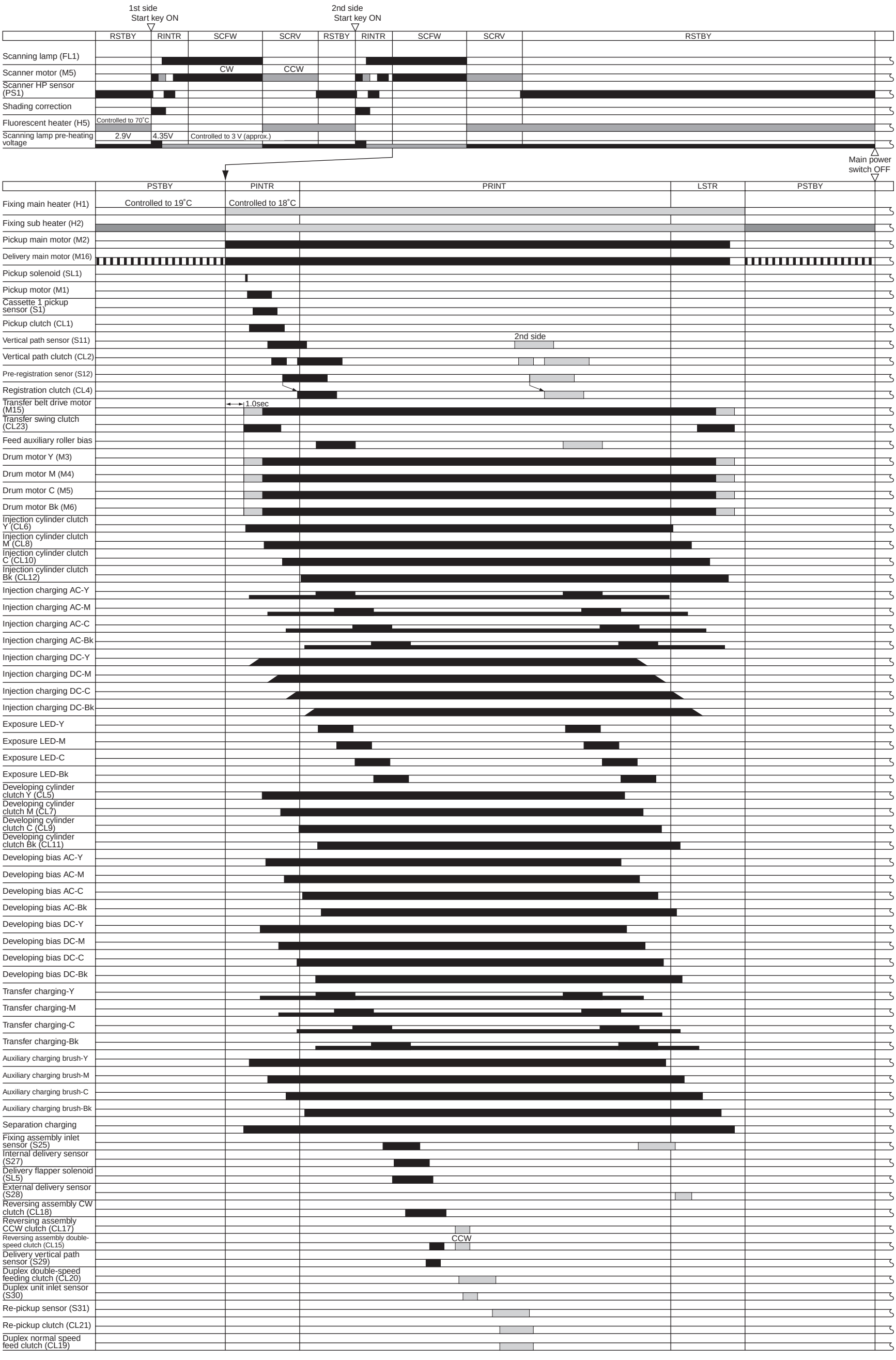
APPENDIX

1 General Timing Chart

Conditions: book mode, non-AE, full color, cassette 1; A4, single-sided (2 prints, continuous)



Conditions: book mode, non-AE, full color, cassette 1; A4, double-sided



2 Signals and Abbreviations

2.1 Signals

BLON	LCD backlight ON signal
CONT0	Scanner motor current control 0 signal
CONT1	Scanner motor current control 1 signal
CONT2	Scanner motor current control 2 signal
CONT3	Scanner motor current control 3 signal
COVDEC	Copyboard cover open/closed signal
CW/CCW	Scanner motor rotation direction switch signal
FAN_LOCK	Power supply cooling fan locked signal
FL_S	Scanning lamp intensity adjustment signal
FL_TH	Scanning lamp thermistor signal
FLCLK	Scanning lamp locked signal
FLERR	Scanning lamp error signal
FLONOUT	Scanning lamp ON signal
FLPWM	Scanning lamp activation signal
KEY	Control key switch signal
M/H	Scanner motor drive voltage switch signal
MOVE	Scanner motor drive power supply signal
MTCLK	Scanner motor drive clock signal
OPPSON	Accessories power supply PCB signal
PFANDEC	Power supply cooling fan rotation direction signal
PSFANON	Power supply cooling fan drive signal
REMOON	Power supply cooling fan remote signal
RST	Scanner motor reset signal
SCHP	Scanner home position signal
SIZE0	Original size 0 signal
SIZE1	Original size 1 signal
SIZE2	Original size 2 signal
SIZE3	Original size 3 signal
SOFSWON	Power supply soft switch ON signal
STP0	Scanner motor step 0 signal
STP1	Scanner motor step 1 signal
STP2	Scanner motor step 2 signal
STP3	Scanner motor step 3 signal
YON	Pre-heating ON signal
YPWM	Pre-heating PWM signal

2.2 Abbreviations

RINTR	Reader initial multiple rotation
RSTBY	Reader standby
SCFW	Scanner forward
SCRV	Scanner reverse
WMUP	Warm-up

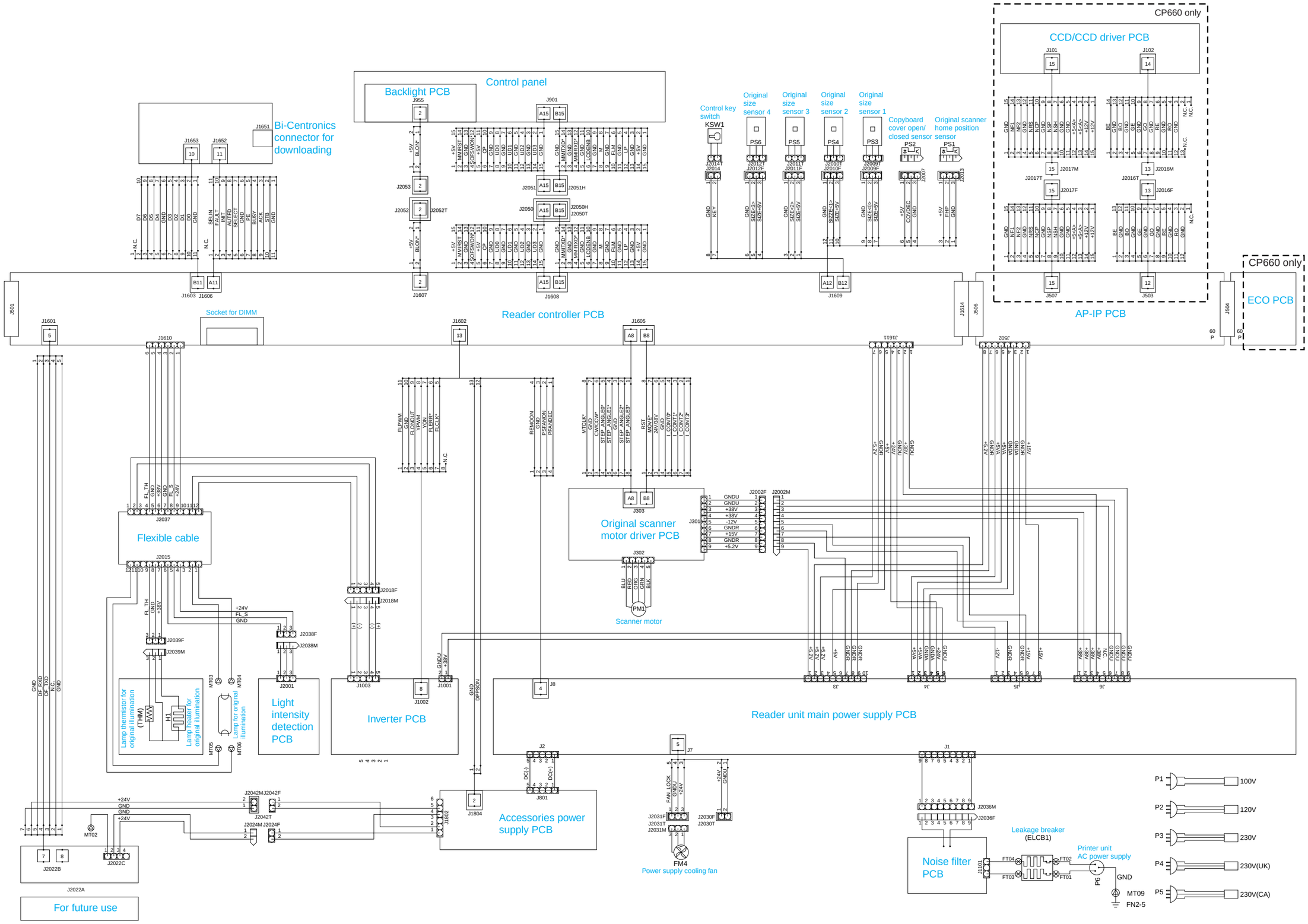
3 Special Tools

See the Printer Handbook.

4 Solvents and Oils

See the Printer Handbook.

5 Reader Unit General Timing Diagram



Printer Unit

SERVICE HANDBOOK

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CHAPTER 1 MAINTENANCE AND INSPECTION

1 Periodically Replaced Parts

As of May 2000

No.	Part name	Part No.	Q'ty	Life (prints)	Remarks
1	Air filter	FB5-1463	1	300,000	Or, 1 yr.

The above values are estimates only, and are subject to change based on future data.

T01-100-01

2 Consumables and Durables

2.1 Printer Unit

As of May 2000

No.	Part name	Part No.	Q'ty	Life (prints)	Remarks
1	Waste toner box	FG6-6795	1	50,000	
2	Fixing web	FB5-1630	1	85,000*	
3	Separation charging assembly	FG6-4167	1	100,000	
4	Transfer blade unit	FG6-4159	4	100,000	
5	Transfer cleaning blade	FB5-1376	1	100,000	
6	Feeding auxiliary roller scraper	FF5-9244	1	100,000	
7	Pickup roller (cassette)	FF5-4552	2	120,000	Actual prints made.
8	Feeding roller (cassette)	FF5-4552	2	120,000	Actual prints made.
9	Separation roller (cassette)	FF5-4634	2	120,000	Actual prints made.
10	Pickup roller (manual feed)	FB1-8581	1	120,000	Actual prints made.
11	Separation roller (manual feed)	FB5-0873	1	120,000	Actual prints made.
12	Fixing roller	FB5-1131	1	150,000	
13	Pressure roller	FB5-1132/1133	1	150,000	
14	Fixing main heater (110 V)	FH7-4640	1	150,000	
	Fixing main heater (120 V)	FH7-4642	1	150,000	
	Fixing main heater (230 V)	FH7-4644	1	150,000	
15	Fixing sub heater (100 V)	FH7-4641	1	150,000	
	Fixing sub heater (120 V)	FH7-4643	1	150,000	
	Fixing sub heater (230 V)	FH7-4645	1	150,000	
16	Thermistor	FH7-7519	2	150,000	
17	Thermal switch	FG6-6798	1	150,000	
18	Fixing separation claw	FB5-1191	6	150,000	
19	Transfer belt	FB5-3929	1	300,000	
20	Belt back scraper	FF5-9327	1	300,000	
21	Fur brush (transfer cleaning assembly)	FB5-1380	1	300,000	

The above values are estimates only, and are subject to change based on future data.

* Applies only when the color print ratio is 60% and when copies made at a copy count of 5 or lower take up 25% of the total.

T01-201-01

2.2 Cassette Pedestal

As of May 2000

No.	Part name	Part No.	Q'ty	Life (prints)	Remarks
1	Pickup roller	FF5-4552	2	120,000	Actual prints made.
2	Feeding roller	FF5-4552	2	120,000	Actual prints made.
3	Separation roller	FF5-4634	2	120,000	Actual prints made.

The above values are estimates only, and are subject to change based on future data.

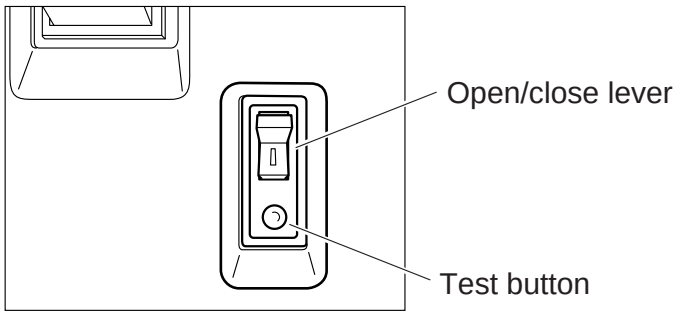
T01-202-01

3 Scheduled Servicing

1. As a rule, provide scheduled servicing every 50,000 prints.
2. Before setting out on a scheduled visit, check the Service Book, and take parts for which replacement is expected.

1) Report to the person in charge.
   Check the general condition.
2) Record the counter reading.
   Check faulty prints.
3) Make test prints in Direct, Reduce, and Enlarge modes; and check the following:
   a. Image
   b. White background for soiling
   c. Characters for clarity
   d. Leading edge margin (standard: 2.5 ±1.5 mm in Direct)
   e. Left margin (standard: 2.0 ±1.5 mm in Direct)
   f. Fixing, registration, back for soiling
4) Perform scheduled servicing according to the number of prints made. (See 4 “Scheduled Servicing Chart.”)
5) Clean any soiled areas inside the machine.
6) Make test prints.

7) Push the test button of the leakage breaker, and check to make sure that the open/close lever shifts to the OFF side.
   After the check, turn off the power switch, and shift the lever to the ON side; thereafter, turn on the power switch.
   If the lever fails to shift to the OFF side, replace the leakage breaker. Then, check the operation of the breaker.



F01-300-01

8) Put the sample prints into order, and clean up the area around the machine.
9) Record the final counter reading.
10) Fill out the Service Book, and report to the person in charge.
    Be sue to record the check on the leakage breaker in the history column of the Service Book.

4 Scheduled Servicing Chart

Do not use solvents or oils other than those indicated.

△: Clean ●: Replace ×: Lubricate □: Adjust ◎: Inspect

As of May 2000

Unit	Part	Maintenance intervals: Every 50,000	Every 100,000	Every 150,000	Every 300,000	Others	Remarks
Inside cover (left lower)	Air filter				●		Or, 1 yr.
Exposure assembly	Exposure LED					△	As needed; when replacing drum unit.
Transfer assembly	Transfer belt drive roller (1 pc.)					△	When replacing transfer belt.
	Transfer belt slave roller (3 pc.)					△	When replacing transfer belt.
	Feeding auxiliary roller (lower)					△	When replacing transfer belt.
	Transfer belt HP sensor					△	When replacing transfer belt.
Pickup/feeding assembly	Feeding auxiliary roller	△					
	Scraper						
	Manual feeding roller (upper)					△	When replacing manual feed pickup roller.
Fixing/delivery assembly	Fixing assembly inlet guide	△					
	Delivery separation claw	△					
	Thermistor (main/sub)					△	When replacing fixing roller.
	Thermal switch					△	When replacing fixing roller.

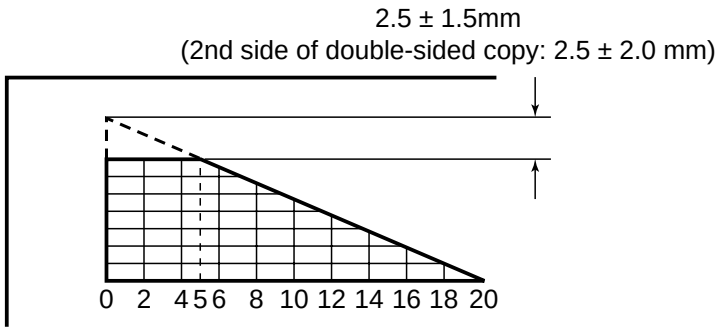
T01-400-01

CHAPTER 2 STANDARDS AND ADJUSTMENTS

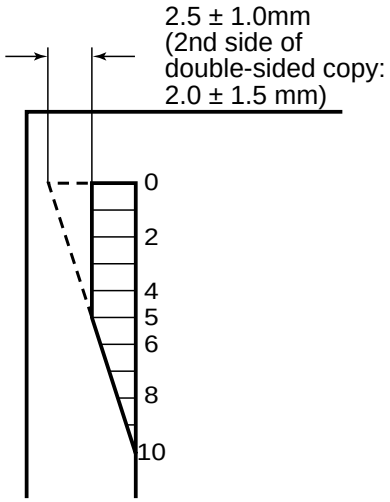
1 Adjusting the Image Position

1.1 Standards for Image Position

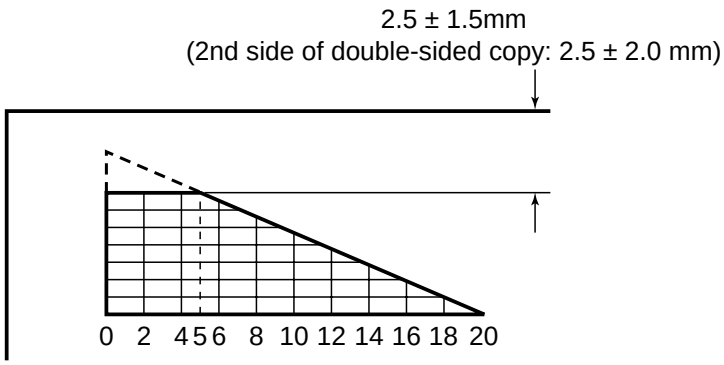
The image margin/non-image margin must be as follows in prints made in Direct.



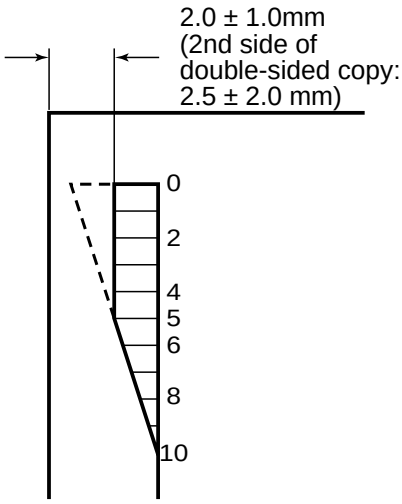
F02-101-01 Leading Edge Non-Image Width



F02-101-02 Left/Right Non-Image Width



F02-101-03 Leading Edge Margin



F02-101-04 Left/Right Margin

1.2 Checking the Position of the Image

Make 10 prints each from the following sources of paper, and check the output to see if the image margin and the non-image width are as specified:

[1] Cassettes
[2] Manual feed tray
[3] Side paper deck
[4] Duplex unit

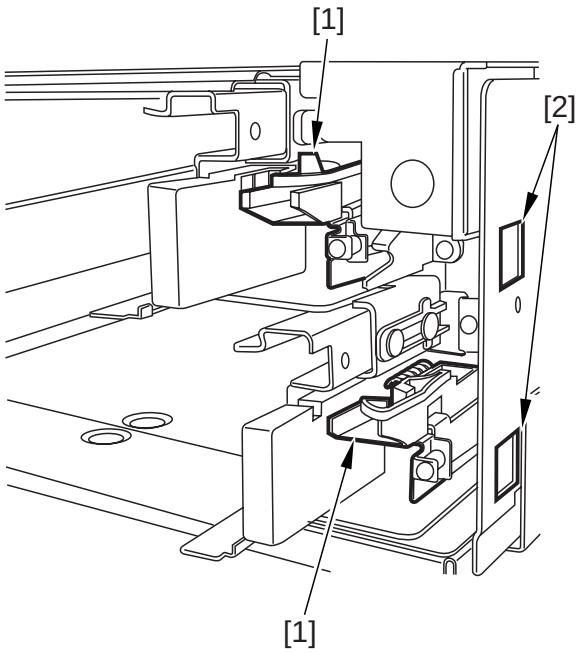
If they are not as specified, adjust the image position by performing the following in sequence:

1. Left/right image margin adjustment (adjusting the horizontal registration)
2. Leading edge image margin adjustment (adjusting the image write start position to the LED exposure unit in sub scanning direction)
3. Left/right non-image width (adjusting the image mask area to the LED exposure unit in main scanning direction)
4. Leading edge non-image width (adjusting the image mask area to the LED exposure unit in sub scanning direction)

1.3 Adjusting the Left/Right Image Margin

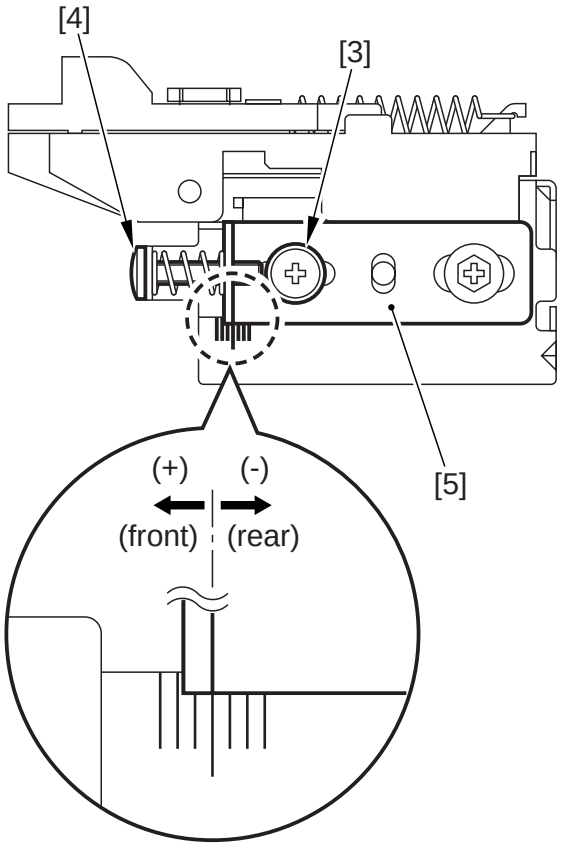
a. Cassette

1) Remove the cassette.
2) Remove the right cover L.
3) For the horizontal registration assembly [1] of the cassette to adjust, insert a screwdriver through the hole [2] in the right side plate; then, loosen the fixing screw [3].
4) Turn the adjusting screw [4] until the standards are attained; then, secure it in place with the fixing screw [3]. (The adjusting screw [4] is glued in place.)
5) Turn the adjusting screw [4] clockwise to secure it in place temporarily.



F02-103-01

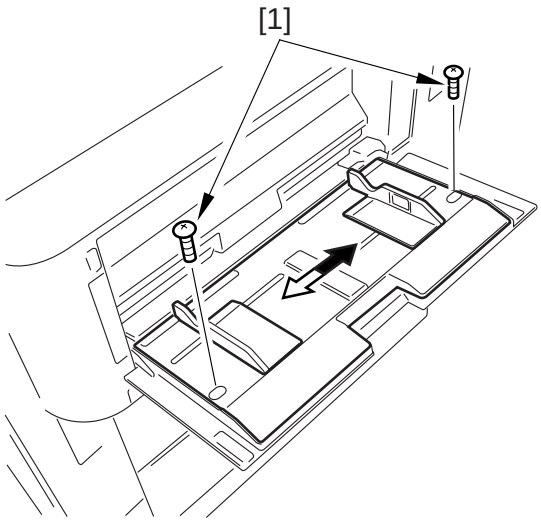
- Be sure to make adjustments so that the inside of the marking L on the adjusting plate [5] and the index match.
- Take care when performing step 5). Tightening the adjusting screw [4] excessively can deform the metal plate.



F02-103-02

b. Manual Feed Tray

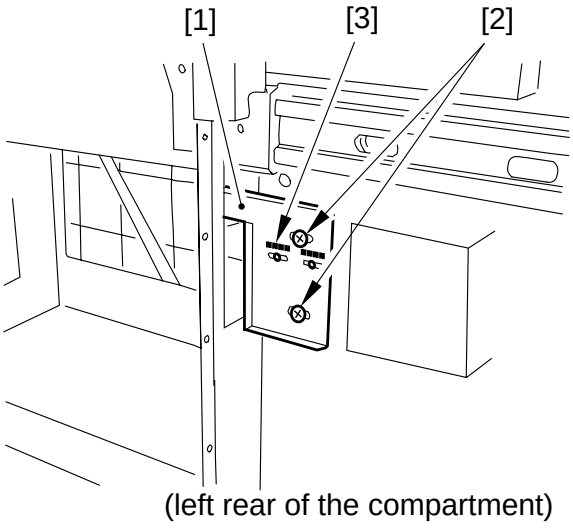
Loosen the two screws [1], and move the slide guide to make adjustments.



F02-103-03

c. Side Paper Deck

1) Slide out the compartment, and adjust the position of the latch plate [1] of the compartment open solenoid (SL102) by means of the two screws [2]. (At this time, use the index [3] on the latch plate as a reference.)

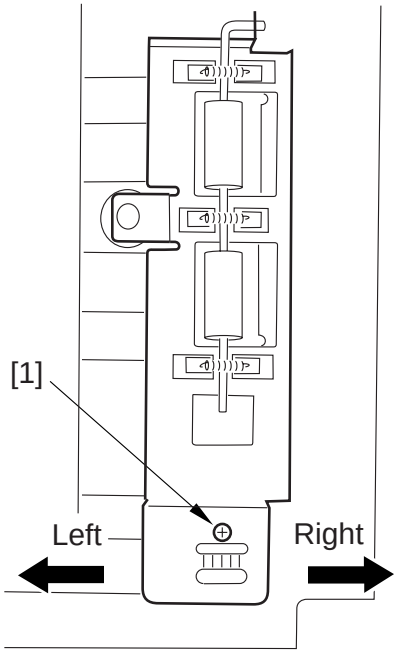


F02-103-04

d. Duplex Unit

Loosen the adjusting screw [1], and make adjustments. (A shift over a single index will cause a change of about 1 mm.)

- To move the paper toward the rear, shift it to the left.
- To move the paper toward the front, shift it to the right.



F02-103-05

1.4 Adjusting the Leading Edge Margin

Adjust the margin by changing the setting in service mode (adjusting the image write start position to the LED exposure unit in sub scanning direction; an increase of '10' will increase the margin by 0.5 mm): COPIER/PRINTER>ADJUST>FEED-ADJ>ADJ-VSYNC/AD-V-OHP/AD-V-SP/AD-V-THC.

1.5 Adjusting the Left/Right Non-Image Width

Adjust the non-image width by changing the setting in service mode (adjusting the image mask area to the LED exposure unit in main scanning direction; a change of '10' will increase the non-image width by 0.5 mm).

1.6 Leading Edge Non-Image Width

Adjust the non-image width by changing the setting in service mode (adjusting the image mask area to the LED exposure unit in sub scanning direction; an increase by '10' will increase the non-image width by 0.5 mm).

2 Image Formation System-Related Adjustments

2.1 Points to Note When Handling the Drum Unit

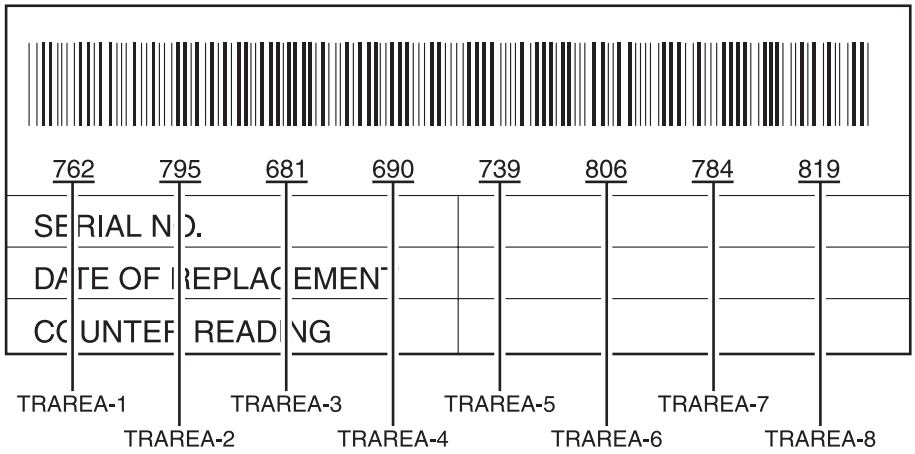
- When taking the drum unit out of the machine, be sure to hold it by its two grips; take care not to impose force large enough to deform it.
- Take care not to force down the shutter surface at the center of the top of the unit; otherwise, the shutter will warp to come into contact with the drum surface.
- Take care not to damage the drum surface after taking the drum unit out of the machine. (The bottom of the drum is not protected by a shutter). When placing it on the floor, in particular, check to make sure that the floor surface is flat and is free of foreign matter; further, lay a sheet of paper underneath.
- Do not place the drum unit near a window, to avoid direct rays of the sun.
- Do not rotate the injection cylinder or the developing cylinder in the wrong direction; otherwise, the agent inside will leak.
- Do not clean the drum. (Wiping its surface layer can trigger image faults.)

2.2 After Replacing the Drum Unit

1) Mount the new drum unit; then, assemble the printer unit to its original state.
2) Connect the power plug, and turn on the main power switch.
3) Execute idle rotation of the developing assembly in service mode:
   COPIER>FUNCTION>INSTALL>STIR-Y/M/C/K.
4) Execute auto gradation correction in user mode.

2.3 After Replacing the Transfer Belt

1) Mount the new transfer belt; then, assemble the printer unit to its initial state.
2) Connect the power plug, and turn on the main power switch.
3) Make the following selections in service mode:
   COPIER>ADJUST>MISC>TRAREA_1.
4) Enter the values on the bar code label (shown next) that comes with the new transfer belt using the keypad, and press the OK key.



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5) Enter the values for TRAREA_2 through 8 in the same way, and press the OK key.
6) Record the eight values on the service label.
7) Attach the bar code label to the service label. As needed, record the date of replacement and the counter reading on the bar code label.

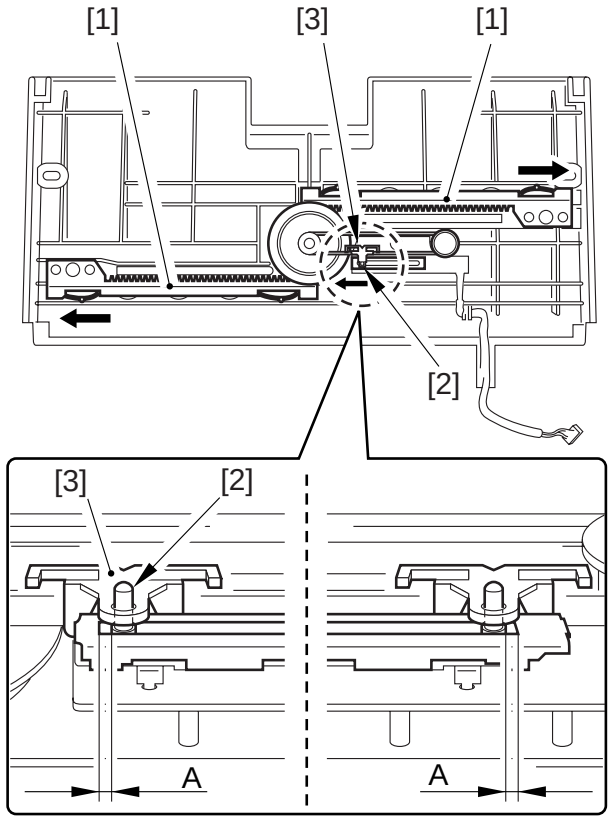
3 Pickup/Feed System-Related Adjustments

3.1 Attaching the Timing Belt for the Manual Feed Tray Assembly

Remove the timing belt from the manual feed tray assembly, and perform the following:

1) Adjust the slide guide to the maximum paper width, and check to make sure that the rack [1] is as indicated.
2) Move the protrusion [2] of the manual feed paper width sensor (S46) in the direction of the arrow until it stops.
3) Mount the timing belt and the parts as shown.

For the protrusion [2] of the manual feed paper width sensor (S46) and the belt lock plate [2], be sure that there will be a gap in section A when the slide guide is moved.



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4) Make the adjustments under “3.2 Executing Paper Width Reference Point Auto Adjustment of the Manual Feed Tray.”

3.2 Executing Paper Width Reference Point Auto Adjustment for the Manual Feed Tray

FUNCTION>CST>MF-xx (xx=A4R, A6R, A4)

<Making Adjustments>

1) Place A4R paper on the manual feed tray, and adjust the slide guide to the paper width.
2) Start service mode, and make the following selections: FUNCTION>CST>MF-A4R (to highlight); then, press the OK key.
3) For A6R and A4, perform the same to register the appropriate reference points,

To make fine adjustments after auto adjustment, use the following: ADJUST>CST-ADJ>MF-xx (xx=A4R, A6R, A4).

3.3 Adjusting the Paper Width Basic Value for the Manual Feed Tray

ADJUST>CST-ADJ>MF-xx (xx=A4R, A6R, A4)

Perform the following if fine adjustment is needed after “3.2 Executing Paper Width Reference Point Auto Adjustment for the Manual Feed Tray.”

<Making Adjustments>

1) Start service mode, and make the following selections: ADJUST>CST-ADJ>MF-A4R (to highlight).
2) Enter the appropriate value using the keypad, and press the OK key.
3) For A6R and A4, perform the same to make fine adjustments.

4 Fixing System-Related Adjustments

4.1 When Replacing the Web

■ If the web has been replaced in response to ‘E005’,

1) Mount the new web, and assemble the printer unit to its initial state.
2) Connect the power plug, and turn on the main power switch. (At this point, ‘E005’ will turn on.)
3) Make the following selections in service mode: COPIER/PRINTER>FUNCTION>CLEAR>ERR; then, press the OK key.
4) Make the following selections in service mode: COPIER/PRINTER>COUNTER>MISC>FIX-WEB; then, press the OK key.
5) Turn off and then on the main power switch.

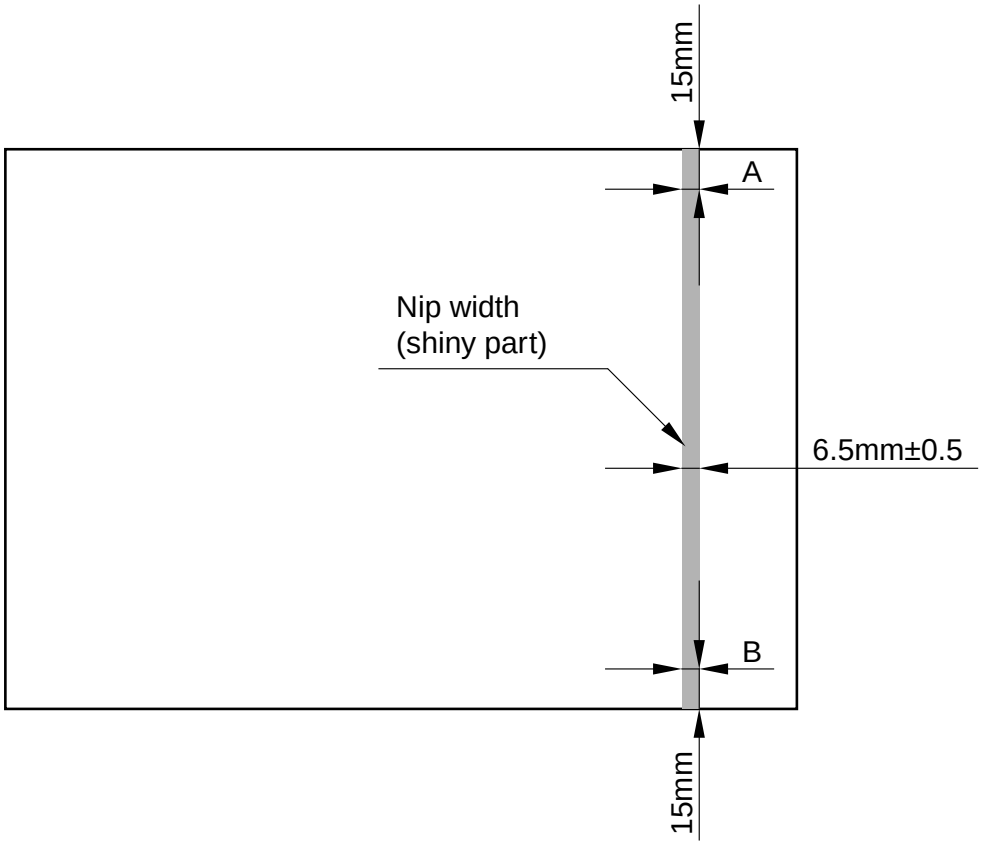
■ If the web has been replaced NOT in response to ‘E005’,

1) Mount the new web, and assemble the printer unit to its initial state.
2) Connect the power plug, and turn on the main power switch.
3) Make the following selections: COPIER/PRINTER>COUNTER>MISC>FIX-WEB; then, press the OK key.
4) Turn off and then on the main power switch.

4.2 Adjusting the Nip

■ Checking the Nip

1) When the machine has entered standby state (i.e., the Start key glows green), wait for 15 min.
2) Make 20 A4 copies.
   (Let the sheets move under the fixing roller and the pressure roller so that the surface of each roller is coated with oil.)
3) Place A3 copy paper in the machine's lower cassette.
4) Make the following selections in service mode: COPIER>FUNCTION>FIXING>NIP-CHK; then, press the OK key. (The A3 copy paper will be picked up.)
5) Check the nip of the image on the output. (See the diagram below.)



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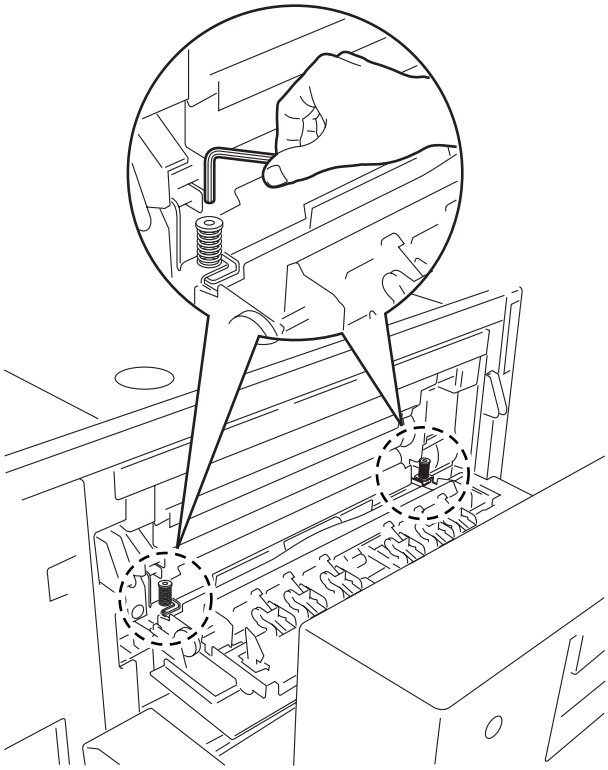
- The nip width at the middle must be 6.5 ±0.5 mm.
- The difference in nip width in relation to the points 15 mm from the edges of the image (areas A and B) must be 1.0 mm or less.

If the difference in nip width is 1.0 mm or more,

Making Adjustments: Adjust the smaller of the two by turning the pressure adjusting screw. (See the figure below; tightening the screw will increase the pressure and, therefore, the nip.)

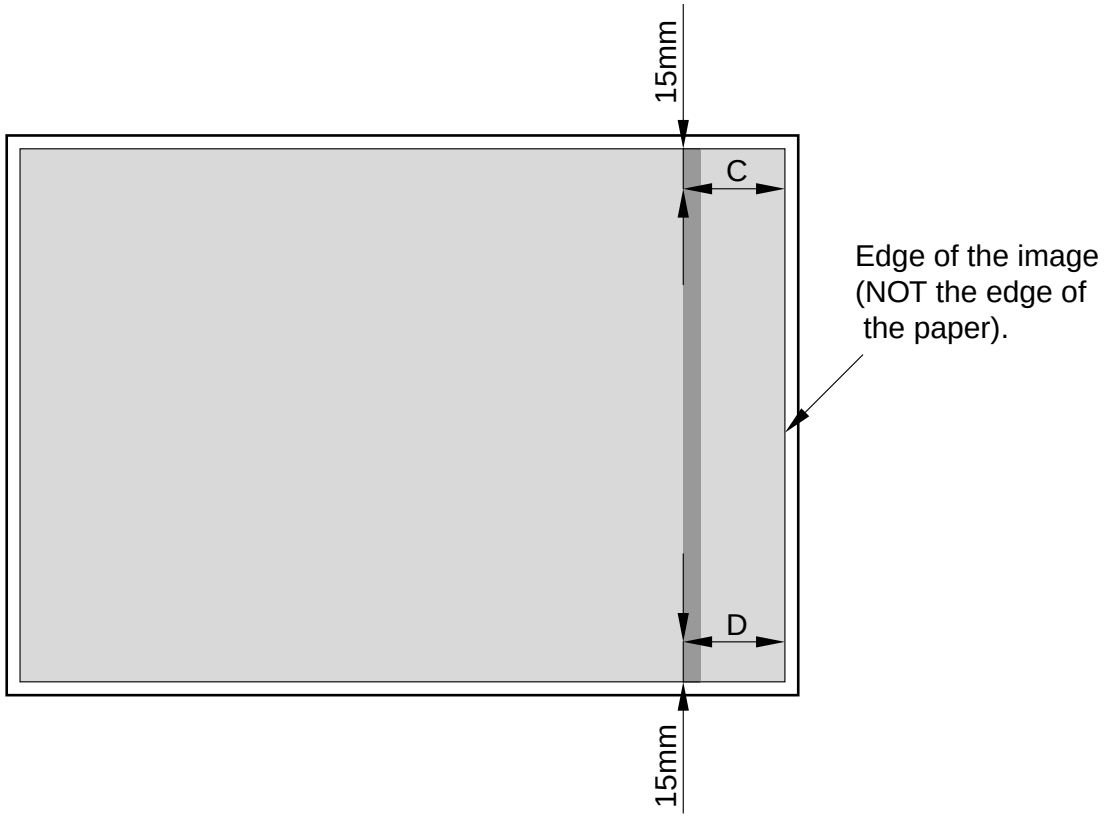


F02-402-02

4.3 Removing the Skew

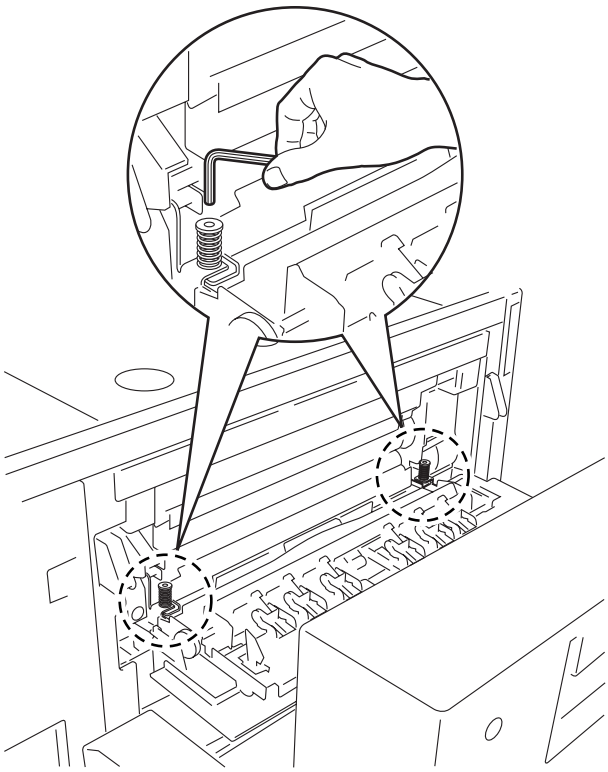
■ Checking the Degree of Skew

1) Check the degree of nip first.
2) Check the following areas of the image on the output.
   - The difference between points 15 mm from both edges of the image (areas C and D) must be 1.0 mm or less. (See the figure below.)



F02-403-01

3) Turn the pressure adjusting screws on the sides to make adjustments.
Making Adjustments: Tighten the pressure adjusting screw for the larger of the two (area C or D; tightening the screw will increase the roller pressure and the speed and, ultimately, will decrease the skew).



F02-403-02

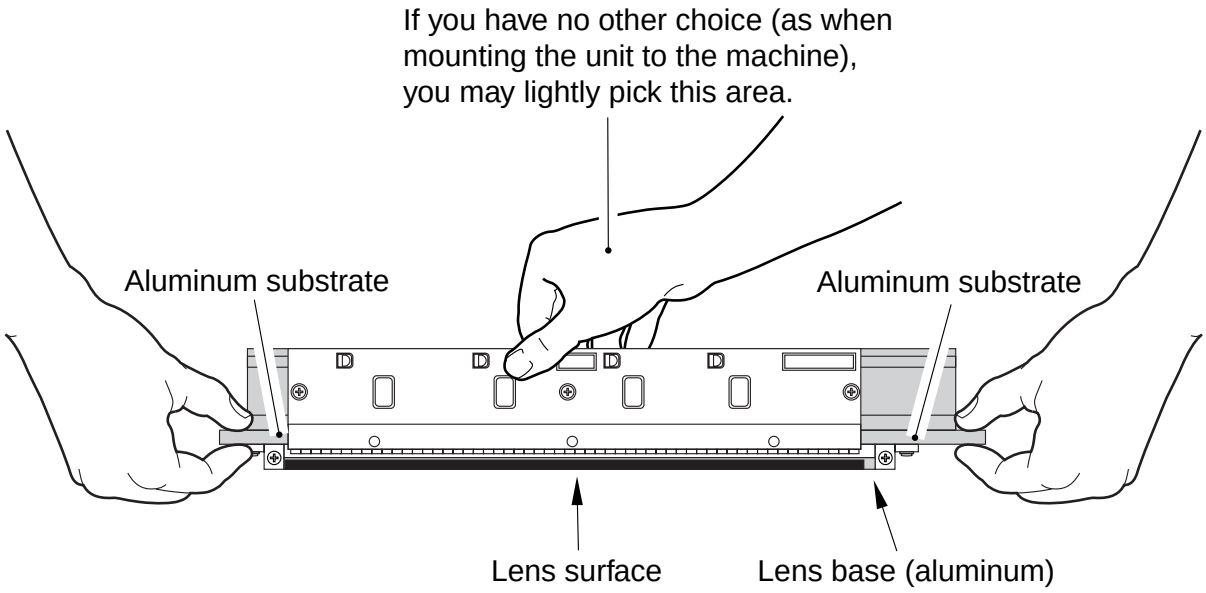
4.4 When Replacing the Fixing Roller

1) Mount the new upper fixing roller; then, put the printer unit back into its initial condition.
2) Connect the power plug, and turn on the main power switch.
3) Make the following selections in service mode: COPIER/PRINTER>COUNTER>FX-UP-RL; then, press the Clear key on the control panel.
4) Turn off and then on the main power switch.
5) Check the nip and the skew. (See 4.2 and 4.3.)

5 LED Exposure Unit-Related Adjustments

5.1 Points to Note When Handling the LED Exposure Unit

- Before holding the LED exposure unit, be sure to put on a strap (CK-0534-000) grounded to the printer unit.
- The LED exposure unit contains parts mounted with an extremely high accuracy; be sure to take care not to impose force to its parts.
- When holding the LED exposure unit, be sure to pick both edges of the aluminum substrate; do NOT touch the lens surface or the aluminum base on which lenses are mounted. (Contact with a hand can cause image faults regardless of the presence of oils or stains.)


If you have no other choice (as when mounting the unit to the machine), you may lightly pick this area.
Aluminum substrate
Aluminum substrate
Lens surface
Lens base (aluminum)

F02-501-01 Holding the LED Exposure Unit

- Unless the lens surface is apparently soiled and image faults (light image, uneven density) occur as a result, do NOT clean the lens surface.

5.2 Points to Note When Mounting the LED Exposure Unit

- When mounting the LED exposure unit to the mounting pin on the machine, check to make sure that the pin and the LED exposure unit are free of dust and foreign matter.
- Check to make sure that the LED exposure unit is secured fully to the bottom of the mounting pin.

5.3 After Replacing the LED Exposure Unit

1) Replace the LED exposure unit, and assemble the machine to its initial state.
2) Connect the power plug, and turn on the main power switch.
3) Execute head shading in user mode.

5.4 Cleaning the LED Exposure Unit (if image faults, e.g., light images, uneven images, occur as the result of dirt on the lens surface)

1) Clean with a cleaning bar as follows:

■ Open the front cover, and pull the cleaning bar until it stops; then, push it back in. Repeat this four to five times.

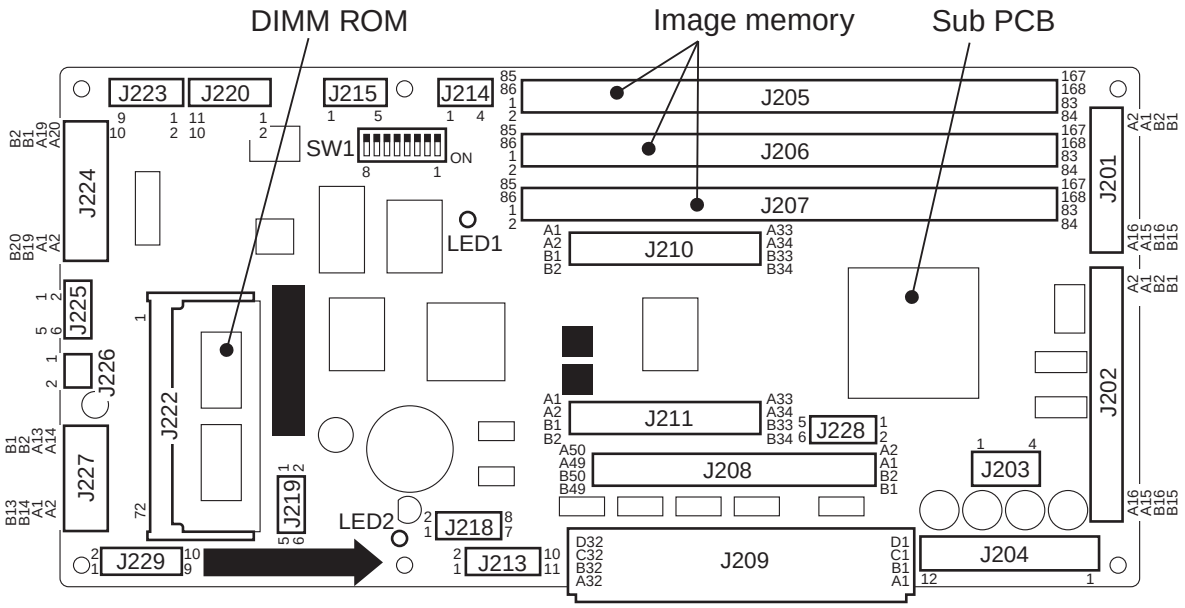
2) If no improvement is noted, remove the LED exposure unit, and clean as follows:

■ If the dirt is on the LED exposure unit or the lens surface, dry wipe with lint-free paper. If the dirt is excessive, moisten the lint-free paper with an appropriate amount of alcohol.

6 Adjusting Other Electric Parts

6.1 When Replacing the System Controller PCB

1) Open the printer unit front cover.
2) Check to make sure that all items identified by “S” on the service label attached to the front cover carry values; otherwise, start service mode, and copy the missing values.
3) Turn off the main power switch, and disconnect the power plug.
4) Remove the problem system controller PCB.
5) Mount the new system controller PCB.
6) Detach the DIM ROM, image memory, and sub PCBs from the system controller PCB; then, mount them to the new system controller PCB.



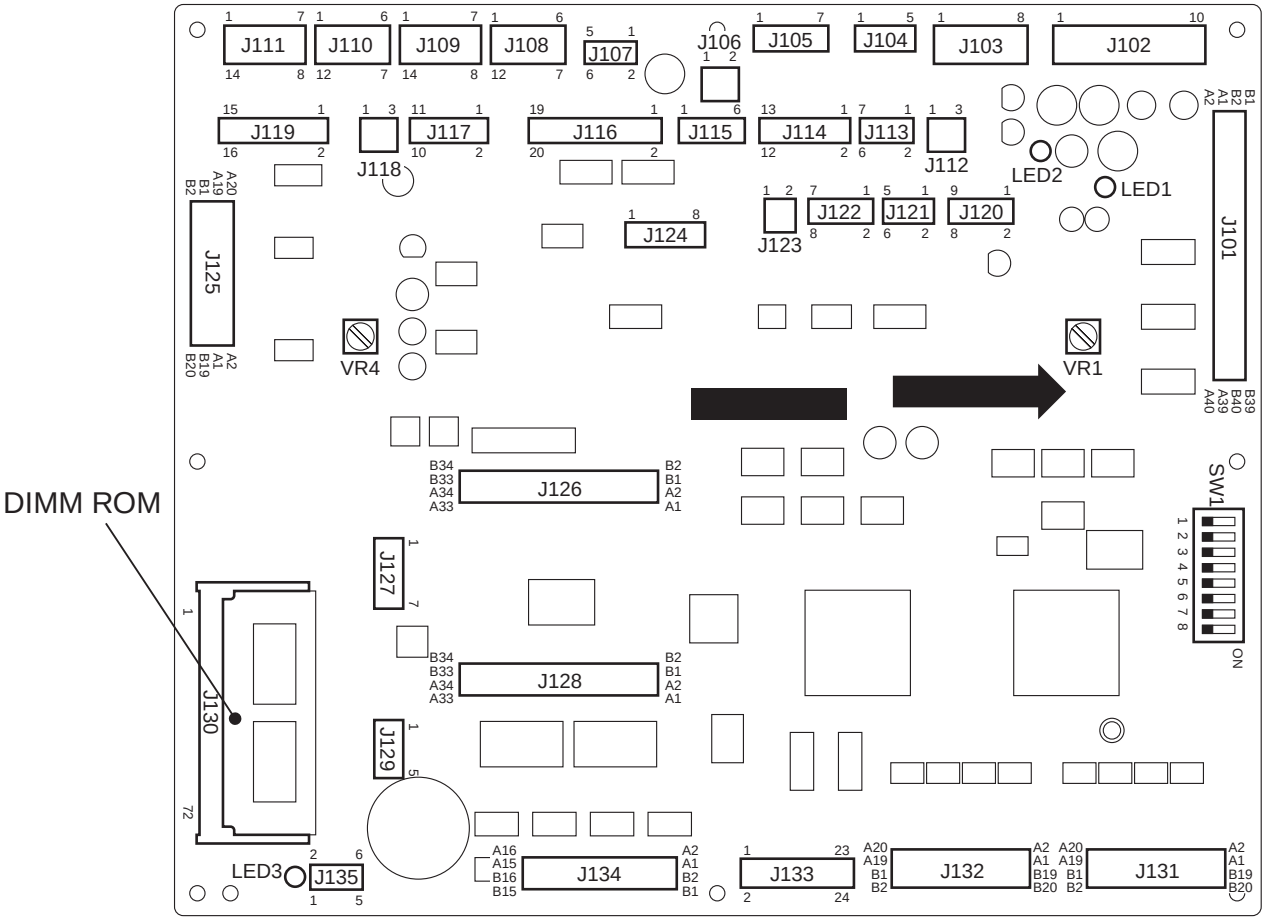
F02-601-01 (top view of the board)

If replaced, the version of the DIM ROM may prove to be incompatible; be sure to upgrade the DIM ROM of the reader controller PCB, DC controller PCB, and system controller PCB.

7) Assemble the machine to its initial state.
8) Connect the power plug, and turn on the power switch.
9) Execute the following: FUNCTION>CLEAR>S-CON. (Upon execution, the power will automatically turn off.)
10) Turn on the main power supply.
11) Enter all items identified by “S” on the service label.
12) Close the printer unit front cover.

6.2 When Replacing the DC Controller PCB

1) Open the printer unit front cover.
2) Check to make sure that all items identified by “D” on the service label attached to the front cover carry values; otherwise, start service mode, and copy the missing values.
3) Turn off the main power switch, and disconnect the power plug.
4) Remove the problem DC controller PCB.
5) Mount the new DC controller PCB.
6) Detach the DIMM ROM from the problem DC controller PCB, and mount it to the new DC controller PCB.



F02-602-01 (top view of the board)

If replaced, the version of the DIM ROM may prove to be incompatible; be sure to upgrade the DIM ROM of the reader controller PCB, DC controller PCB, and system controller PCB.

7) Assemble the printer unit to its initial state.
8) Connect the power plug, and turn on the main power switch.
9) Execute the following in service mode: FUNCTION>CLEAR>DC-CON. (Upon completion, the power will automatically turn off.)
10) Turn on the main power.
11) Enter all items indicated by “D” on the service label.
12) Close the printer unit front cover.
13) Correct color displacement in user mode.

6.3 Checking the Environment Measurement PCB

The environment measurement PCB and the environment sensor are checked using the environment measurement PCB checking tool (TKN-0457) and the environment sensor calibrating tool (TKN-0456).

a. Checking the Environment Measurement PCB

1) Turn off the main power switch.
2) Remove the manual feed inside cover.
3) Detach the environment sensor from the environment measurement PCB; in its place, fit the environment measurement PCB checking tool (TKN-0457).
4) Turn on the main power switch.
5) Set the meter range to 30 VDC, and check to see that the voltage between J1-1 (+) and J1-2 (-) of the environment measurement PCB is 24 ± 2.4 V.
   If not, check the connector for connection; if normal, suspect a fault in the DC controller PCB.
6) Make the following selections in service mode: COPIER>DISPLAY>ANALOG.
7) Check the temperature and humidity on the ANALOG screen.
   TEMP: 25 ± 5°C
   HUM: 40 ± 10%
8) Check to see if the readings are as indicated. If so, go to step 14).
9) Press the Reset key to end service mode, and turn off the main power switch.
10) Disconnect J1 of the environment measurement PCB.
11) Turn on the main power switch, make the following selections in service mode: COPIER>DISPLAY>ANALOG.
12) Check the temperature and humidity on the ANALOG screen.
    TEMP: 25 ± 5°C
    HUM: 40 ± 10%
13) Check to see that the readings are as indicated.

Memo

If the readings are not as indicated, suspect a fault in the DC controller PCB.

14) Press the Reset key to end service mode.
15) Turn off the main power switch.
16) Connect J1 to the environment measurement PCB.
17) Detach the environment measurement PCB checking tool from the environment measurement PCB; then, mount the environment sensor.
18) Mount all covers.

b. Checking the Environment Sensor

1) Check the environment measurement PCB.
2) Turn on the main power switch, and leave it alone for 5 min.
3) Make the following selections in service mode: COPIER>DISPLAY>ANALOG.
4) Check the temperature and humidity on the ANALOG screen, and take notes:
   TEMP: °C (data A1)
   HUM: % (data A2)
5) Press the Rest key to end service mode; then, turn off the main power switch.
6) Detach the environment sensor from the environment measurement PCB; in its place, fit the environment sensor calibrating tool (TKN-0456).
7) Turn on the main power switch, and leave it alone for 5 min.
8) Make the following selections in service mode: COPIER>DISPLAY>ANALOG.
9) On the ANALOG screen, check the temperature and humidity; then, take notes of them:
   TEMP: °C (data B1)
   HUM: % (data B2)
10) Compare data A and data B.
   • difference between data A1 and data B1 is 0 ± 5
   • difference between data A2 and data B2 is 0 ± 20
   If the difference between data A and data B is not as indicated, replace the environment sensor.
11) Press the Reset key to end service mode; then, turn off the main power switch.
12) Detach the environment sensor calibrating tool from the environment measurement PCB; then, mount the environment sensor.
13) Attach all covers.

The environment sensor calibrating tool (TKN-0456) is adjusted at the factory. Be sure to store it in an air-tight container with a drying agent.

6.4 Checking the Photointerrupters

The machine allows checking its photointerrupters by means of a conventional meter or its service mode.

a. Using a Meter

1) Set the meter range to 30 VDC.
2) Connect the (-) probe of the meter to any of the following:
   DC controller PCB: J102-8 (GND)
   Serial driver PCB: J317-4 (GND)
   Duplex driver PCB: J505-4 (GND)
   Pedestal controller PCB: J650-3 (GND)
3) Connect the (+) probe to the terminals indicated (in tables that follow).
4) Make checks as instructed.

b. Using Service Mode

1) Start service mode, and select I/O.
2) Display the I/O address to check, and make a check as instructed.

<Guide to the Connector No. in the Tables>
[1] DC controller PCB [3] Duplex driver PCB
[2] Serial driver PCB [4] Pedestal controller PCB

Sensor	Connector No. I/O address	Checks			I/O display	Voltage reading
S3 Cassette 1 paper sensor	[2]>J302-10 DC-CON>P002-4	Slide out cassette 1, and move the sensor flag by hand.	Paper	Present Absent	0 1	0V 5V
S4 Cassette 2 paper sensor	[2]>J302-11 DC-CON>P002-0	Slide out the cassette 2, and move the sensor flag by hand.	Paper	Present Absent	0 1	0V 5V
S5 Cassette 1 level H sensor	[2]>J302-13 DC-CON>P002-6	Place paper (about 10 mm high) in cassette 1.	Paper	Present Absent	1 0	5V 0V
S6 Cassette paper level L sensor	[2]>J302-14 DC-CON>P002-5	Place paper (about 10 mm high) in cassette 1.	Paper	Present Absent	1 0	5V 0V
S7 Cassette 2 paper level H sensor	[2]>J302-15 DC-CON>P002-2	Place paper (about 10 mm high) in cassette 2.	Paper	Present Absent	1 0	5V 0V
S8 Cassette 2 paper level L sensor	[2]>J302-16 DC-CON>P002-1	Place paper (about 10 mm high) in cassette 2.	Paper	Present Absent	1 0	5V 0V
S9 Cassette 1 pickup sensor	[2]>J302-17 DC-CON>P002-7	Slide out cassette 1, and move the sensor flag using paper or the like.	Paper	Present Absent	1 0	5V 0V

Sensor	Connector No. I/O address	Checks			I/O display	Voltage reading
S10 Cassette 2 pickup sensor	[2]>J302-18 DC-CON>P002-10	Slide out cassette 2, and move the sensor flag using paper or the like.	Paper	Present Absent	1 0	5V 0V
S11 Vertical path sensor	[2]>J318-6 DC-CON>P001-4	Open the right cover, and move the sensor flag by hand.	Paper	Present Absent	0 1	5V 0V
S12 Pre-registration sensor	[2]>J319-2 DC-CON>P001-3	Open the right cover, and put paper over the sensor.	Paper	Present Absent	1 0	5V 0V
S13 Transparency sensor, front	[1]>J119-5 DC-CON>P009-5	Open the manual feed tray, and put paper over the sensor.	Paper	Present Absent	1 0	5V 0V
S14 Transparency sensor, rear	[1]>J119-8 DC-CON>P009-6	Open the manual feed tray, and put paper over the sensor.	Paper	Present Absent	1 0	5V 0V
S15 Manual feed paper sensor	[2]>J319-5 DC-CON>P001-5	Put paper on the manual feed tray.	Paper	Present Absent	0 1	5V 0V
S24 Web length sensor	[2]>J313-2 DC-CON>P007-6	Open the delivery assembly cover, and move the sensor flag using paper or the like.	Web	Present Short	1 0	5V 0V
S25 Fixing assembly inlet sensor	[2]>J311-2 DC-CON>P007-0	Open the fixing assembly, and secure the sensor flag in place; then, close the fixing assembly.	Paper	Present Absent	1 0	5V 0V
S26 Fixing assembly inlet arch sensor	[2]>J311-5 DC-CON>P007-5	Open the front cover. Slide out the transfer unit, and move the fixing assembly inlet guide by hand.	Fixing assembly inlet guide	Up Down	0 1	0V 5V
S27 Inside delivery sensor	[1]>J311-8 DC-CON>P007-1	Open the delivery assembly cover, and block the sensor.	Light-blocking plate	Present Absent	1 0	5V 0V
S28 (face-down delivery unit) Outside delivery sensor	[2]>J309-7 DC-CON>P007-2	Release the face-down delivery unit, and open the face-down delivery unit cover; then, move the sensor flag by hand.	Paper	Present Absent	1 0	5V 0V
S29 (face-down delivery unit) Delivery vertical path sensor	[2]>J309-4 DC-CON>P007-3	Release the face-down delivery unit, and open the face-down delivery unit cover; then, move the sensor flag by hand.	Paper	Present Absent	1 0	5V 0V
S30 (duplex unit) Duplex unit inlet sensor	[3]>J503-2 DC-CON>P008-1	Release the face-down delivery unit, and put paper over the sensor.	Paper	Present Absent	0 1	5V 0V

Sensor	Connector No. I/O address	Checks			I/O display	Voltage reading
S31 (duplex unit) Re-pickup sensor	[3]>J502-A4 DC-CON>P008-0	Open the front cover, and put paper over the sensor.	Paper	Present Absent	1 0	5V 0V
S33 (duplex unit) Duplex unit lower sensor	[3]>J503-5 DC-CON>P008-2	Release the face-down delivery unit, and put paper over the sensor.	Paper	Present Absent	1 0	5V 0V
S36 Cassette 3 paper sensor	[4]>J655-10 DC-CON>P019-0	Slide out the cassette 3, and move the sensor flag by hand.	Paper	Present Absent	0 1	0V 5V
S37 Cassette 4 paper sensor	[4]>J655-11 DC-CON>P019-1	Slide out cassette 4, and move the sensor flag by hand.	Paper	Present Absent	0 1	0V 5V
S38 Cassette 3 paper level H sensor	[4]>J655-14 DC-CON>P019-5	Put paper (about 10 mm high) in cassette 3.	Paper	Present Absent	1 0	5V 0V
S39 Cassette 3 paper level L sensor	[4]>J655-13 DC-CON>P019-4	Put paper (about 10 mm high) in cassette 3.	Paper	Present Absent	1 0	5V 0V
S40 Cassette 4 paper level H sensor	[4]>J655-16 DC-CON>P019-7	Put paper (about 10 mm high) in cassette 4.	Paper	Present Absent	1 0	5V 0V
S41 Cassette 4 paper level L sensor	[4]>J655-15 DC-CON>P019-6	Put paper (about 10 mm high) in cassette 4.	Paper	Present Absent	1 0	5V 0V
S42 Cassette 3 pickup sensor	[4]>J655-17 DC-CON>P020-6	Slide out cassette 3, and move the sensor flag by hand.	Paper	Present Absent	1 0	5V 0V
S43 Cassette 4 pickup sensor	[4]>J655-18 DC-CON>P020-7	Slide out cassette 4, and move the sensor flag by hand.	Paper	Present Absent	1 0	5V 0V
S44 Vertical path paper sensor	[4]>J655-12 DC-CON>P018-5	Open the right lower cover, and move the sensor flag by hand.	Paper	Present Absent	1 0	5V 0V
S45 Right door open/ closed sensor	[4]>J656-2 DC-CON>P018-6	Open/close the right lower cover.	Right lower cover	Closed Open	1 0	5V 0V
S51 Transfer belt sensor	[1]>J114-11 DC-CON>P014-7	Open/close the front cover, and drive the transfer belt.	Light-blocking plate	Present Absent	0 1	5V 0V
S52 Post-registration sensor	[2]>J318-12 DC-CON>P003-3	Remove the manual feed cover, and move the sensor flag using paper or the like.	Light-blocking plate	Present Absent	1 0	5V 0V
S55 Vertical path door open/closed sensor	[2]>J318-9 DC-CON>P001-0	Open/close the right cover.	Right cover	Open Closed	0 1	5V 0V

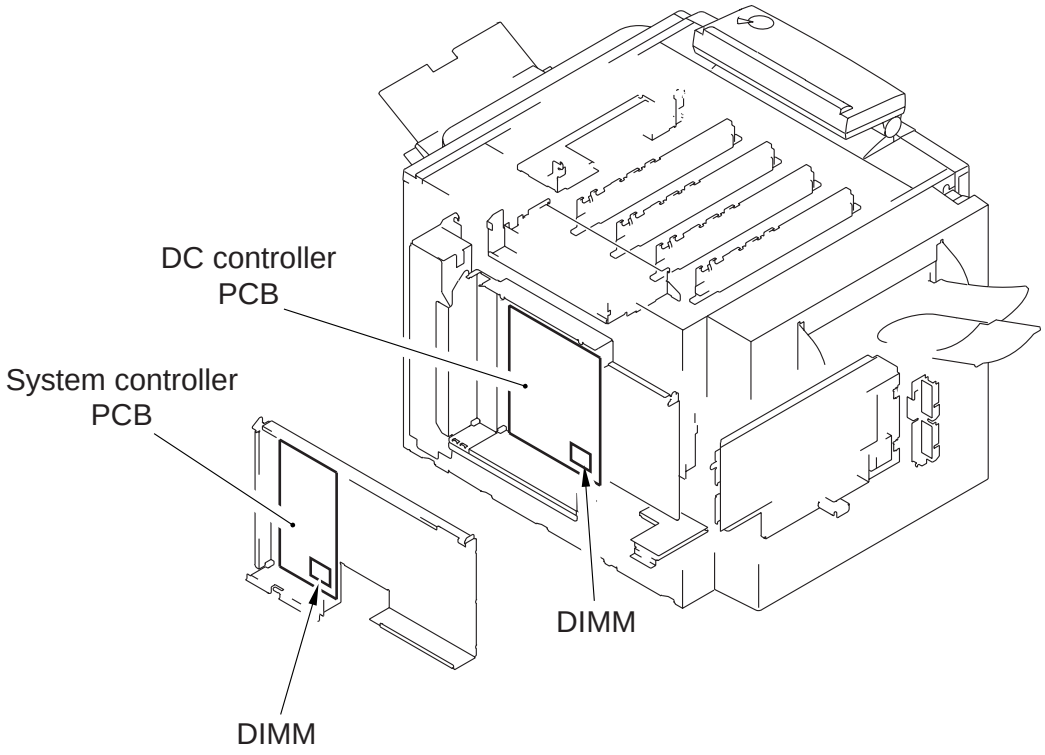
Sensor	Connector No. I/O address	Checks			I/O display	Voltage reading
S56 (face-down delivery unit) Face-down delivery unit release sensor	[2]>J304-10 DC-CON>P007-4		Light-blocking plate	Present Absent	0 1	5V 0V
WTS2 Waste toner sensor (light-receiving element)	[2]>J315-2 DC-CON>P003-2	Remove the waste toner box.	Light-blocking plate	Present Absent	0 1	0V 5V

7 Upgrading

The machine may be upgraded by either of the following two methods:
[1] By replacing the DIMM on the system controller PCB or the DC controller PCB.
[2] By upgrading the DIMM contents through downloading from a PC.

7.1 Replacing the DIMM

The DIMMs are located as shown in the following:



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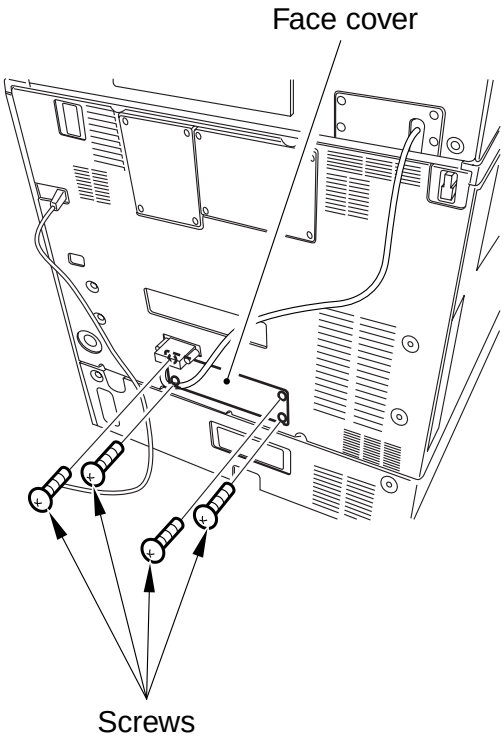
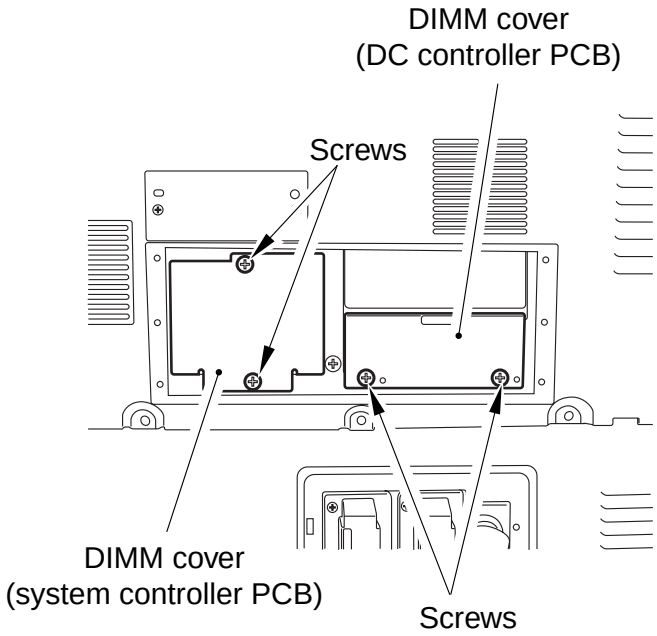
7.1.1 Removing the DIMM

1) Turn off the main power switch, and disconnect the power cord from the power outlet.
2) Remove the four screws, and detach the face cover from the rear cover.



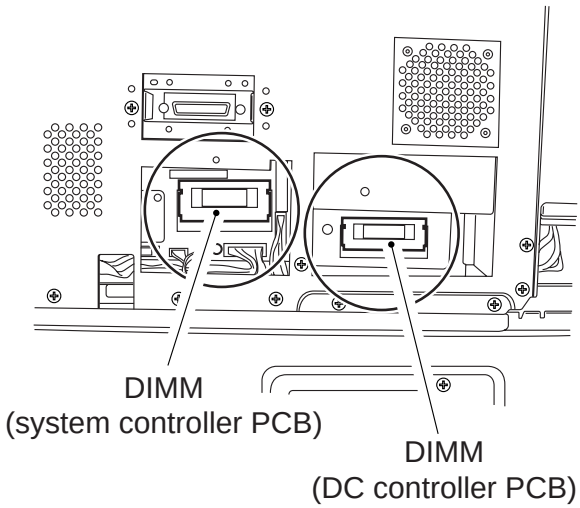
F02-701-02

3) Remove the two screws, and detach the DIMM cover for the DIMM to replace.

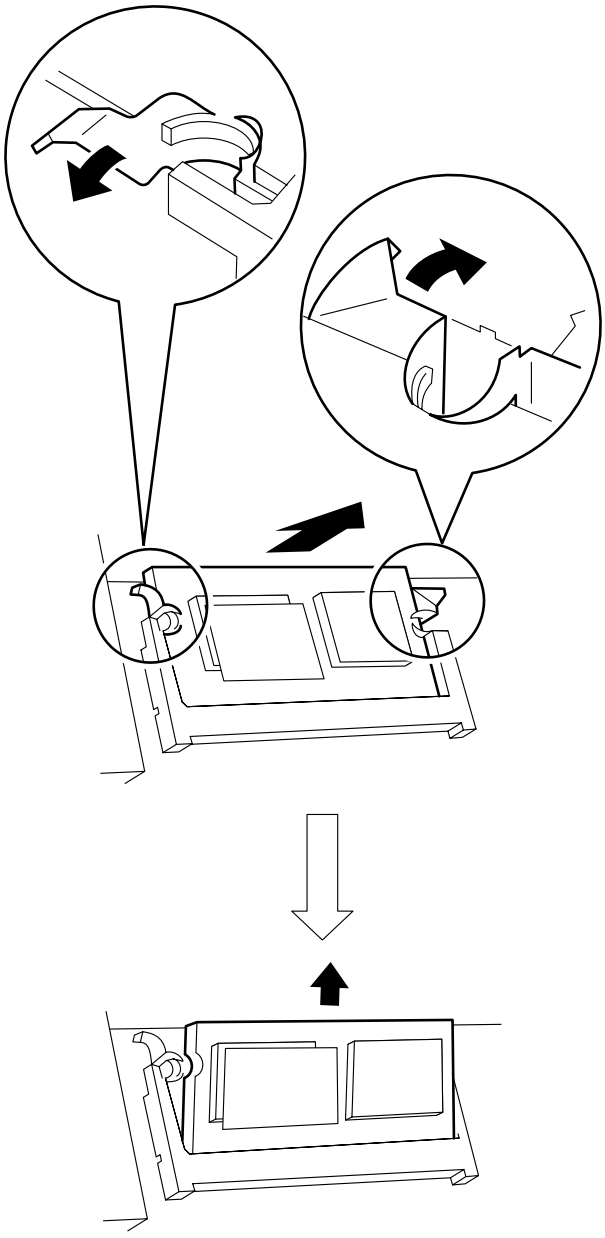


F02-701-03

4) While spreading the claws of the slots , lift the DIMM to detach.



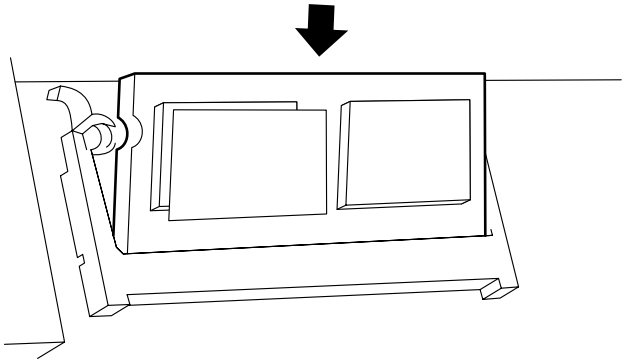
F02-701-04



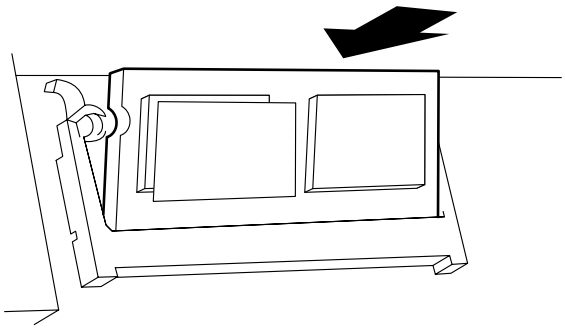
F02-701-05

7.1.2 Mounting the DIMM of the System Controller PCB and the DC Controller PCB

1) Fit the DIMM into the slot at an angle, and shift it down.



F02-701-06



F02-701-07

The DIMM can break. Do not impose excess force.

REF.

After replacing the DIMM,
1. Clear the RAM (COPIER>FUNCTION>CLEAR>S-CON or DC-CON).
2. Enter all settings indicated by “S” or “D” on the service label.
3. Execute color displacement correction in user mode (only if the RAM on the DC controller PCB has been executed).

If you are replacing the DIMM ROM with a new one, be sure to upgrade the DIMM ROM of the reader controller PCB, DC controller PCB, and system controller PCB to make sure that the versions will match.

7.2 Downloading

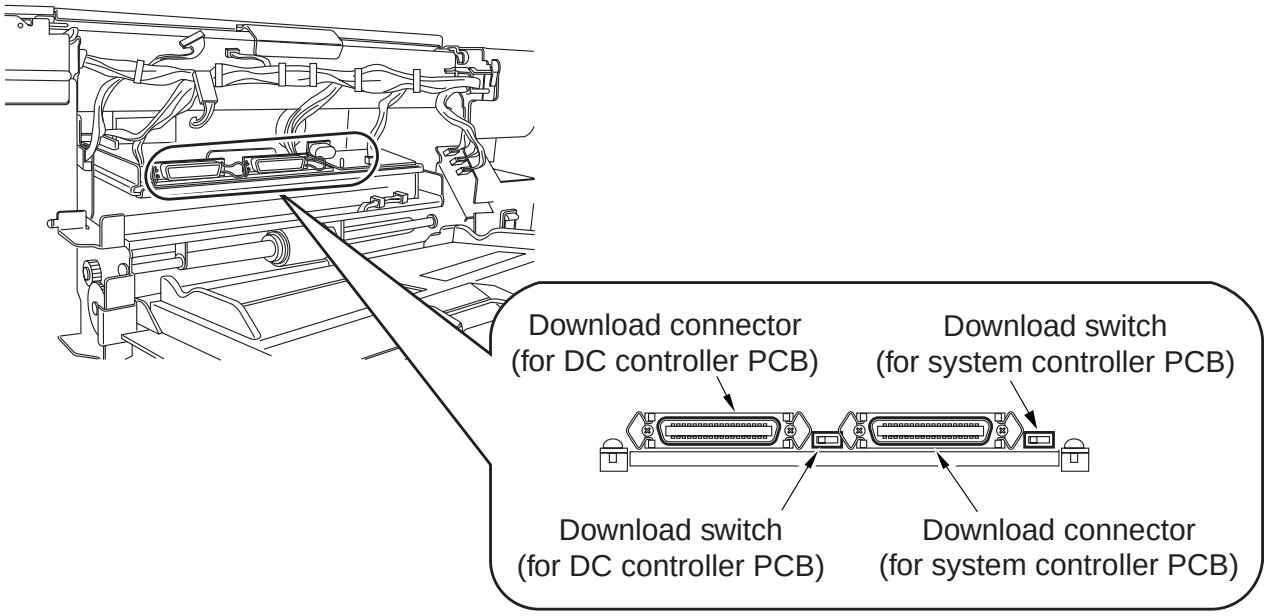
7.2.1 Items to Prepare

- PC (with the Copier Support Tool installed)
- Bi-Centronics cable (with the notation IEEE 1284Std-compliant)

7.2.2 Downloading Procedure

a. Making Connections

1) Turn off the main power switch, and disconnect the power plug from the power outlet.
2) Open the manual feed tray, and detach the manual feed cover.
3) Connect the downloading connector suited to the PCB in question and the PC using a bi-Centronics cable.
   - At this time, the PC must remain off.
   - Connect the 25-pin connector of the bi-Centronics cable to the PC and its 36-pin connector to the printer unit.
4) Slide the download switch of the PCB in question to the LOAD position.

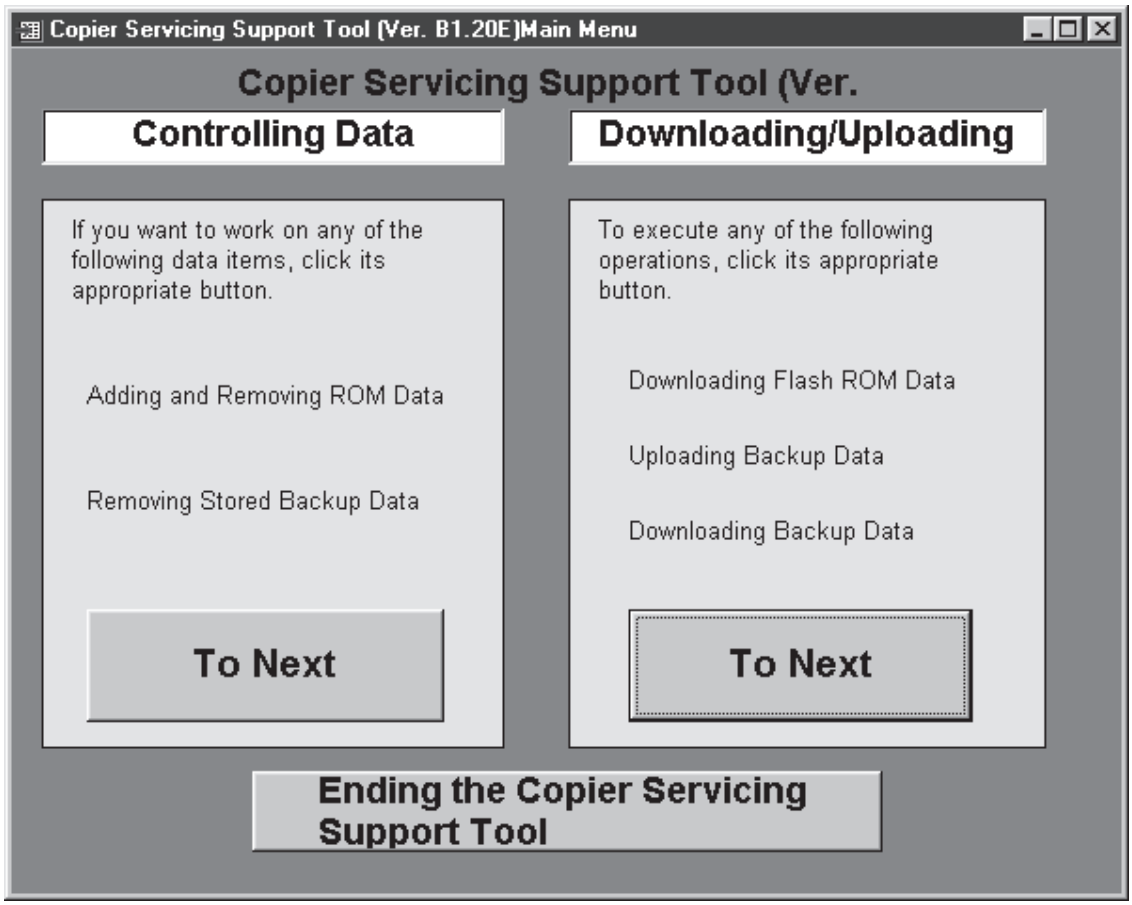


F02-702-01

5) Turn on the PC, and start up the Copier Service Support Tool.
6) Connect the power plug of the printer unit to the power outlet, and turn on the main power switch.
   Power lamp: ON
   Control panel display: OFF

b. Executing Downloading

1) Select 'To Main Menu' from the startup messages of the Copier Service Support Tool.
2) Select 'Next' under 'Download/Upload'.


Copier Servicing Support Tool (Ver. B1.20E)Main Menu
Copier Servicing Support Tool (Ver.
Controlling Data
Downloading/Uploading
If you want to work on any of the following data items, click its appropriate button.
Adding and Removing ROM Data
Removing Stored Backup Data
To Next
To execute any of the following operations, click its appropriate button.
Downloading Flash ROM Data
Uploading Backup Data
Downloading Backup Data
To Next
Ending the Copier Servicing Support Tool

F02-702-02

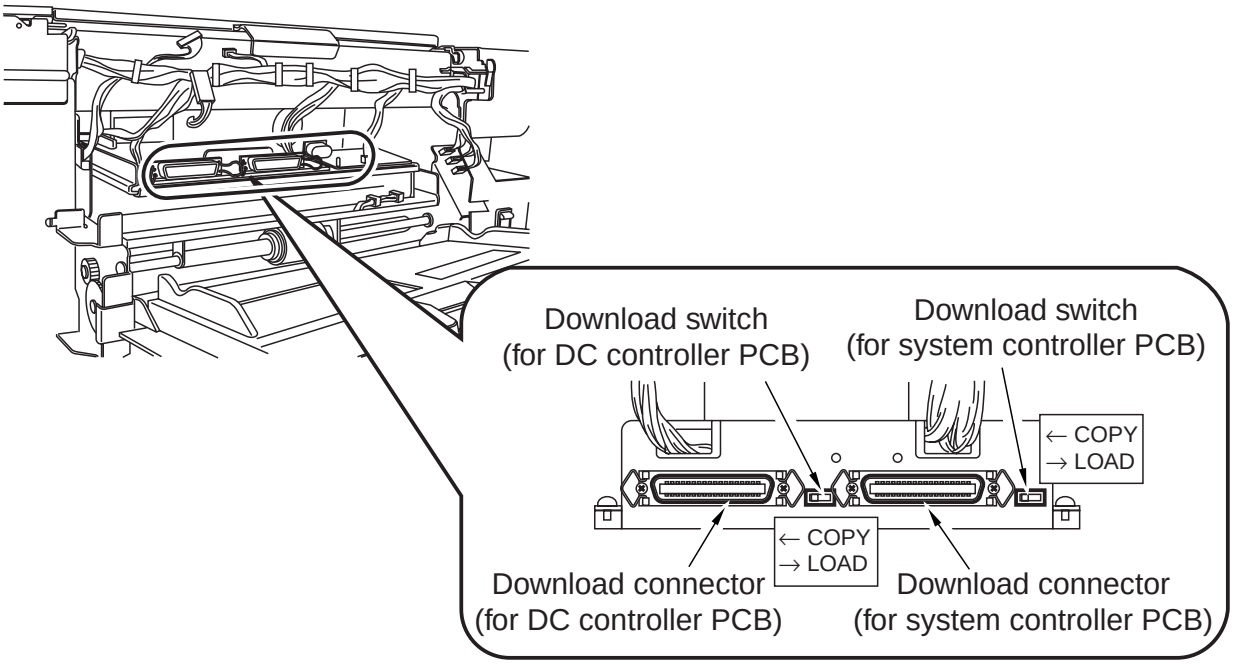
3) Select the PCB in question, and click 'Start to Connect'.
   S-CON: DIMM for system controller PCB
   DC-CON: DIMM for DC controller PCB
4) Download the data for the flash ROM by going through the instructions appearing on the PC screen.

Do not turn off the machine or the PC during downloading; such could put the DIMM out of order, rendering it unusable.

5) When downloading has ended, turn off the PC as follows:
   'OK'→'Return to Main Menu'→'End Copier Service Support Tool'→'End'

c. After Downloading

1) Turn off the main power switch, and disconnect the power plug.
2) Disconnect the bi-Centronics cable from the printer unit.
3) Slide the download switch to the COPY position.



F02-702-03

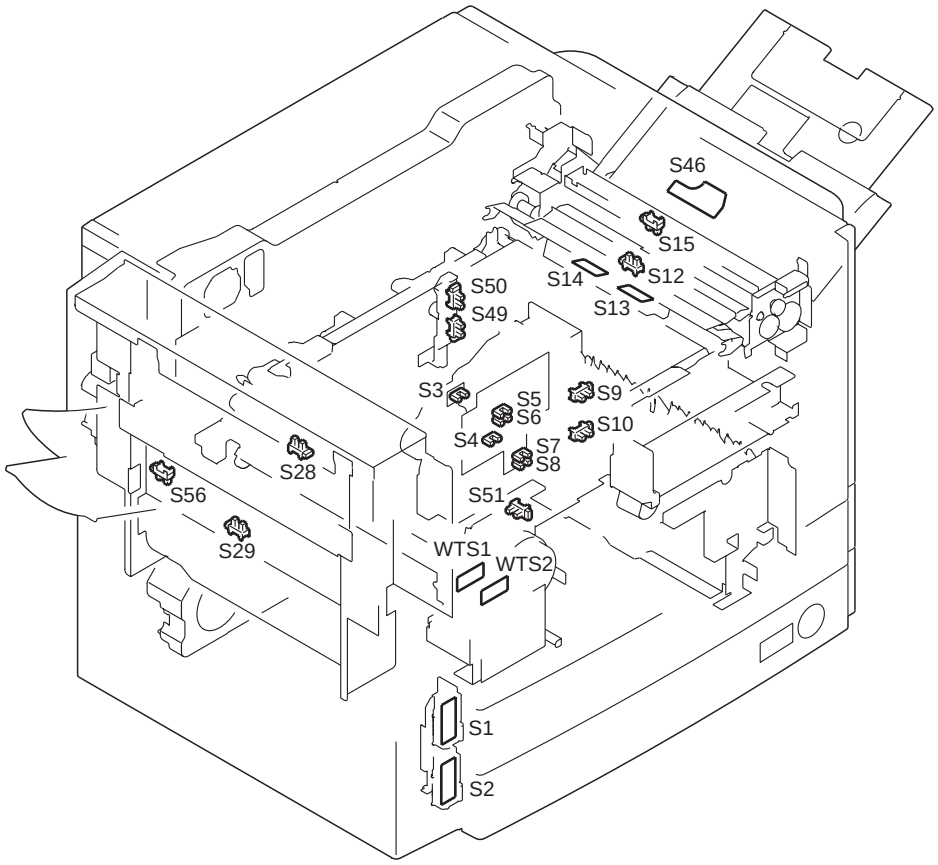
4) Connect the power plug to the power outlet, and turn on the main power switch.
5) Start service mode, and check the ROM version.
   • COPIER>DISPLAY>VERSION>S-CON or DC-CON
6) After the check, attach the manual feed cover.

After upgrading work, be sure to perform the following:
1. Execute RAM clear (COPIER>FUNCTION>CLEAR>S-CON or DC-CON).
2. Enter all settings indicated by “S” or “D” on the service label.
3. Execute color displacement in user mode (only if the RAM on the DC controller PCB has been cleared).

If you are upgrading the DIMM ROM, be sure to upgrade the DIMM ROM of the reader controller PCB, DC controller PCB, and system controller PCB so that all versions will match.

CHAPTER 3 ARRANGEMENT AND FUNCTIONS OF ELECTRICAL PARTS

1 Sensors

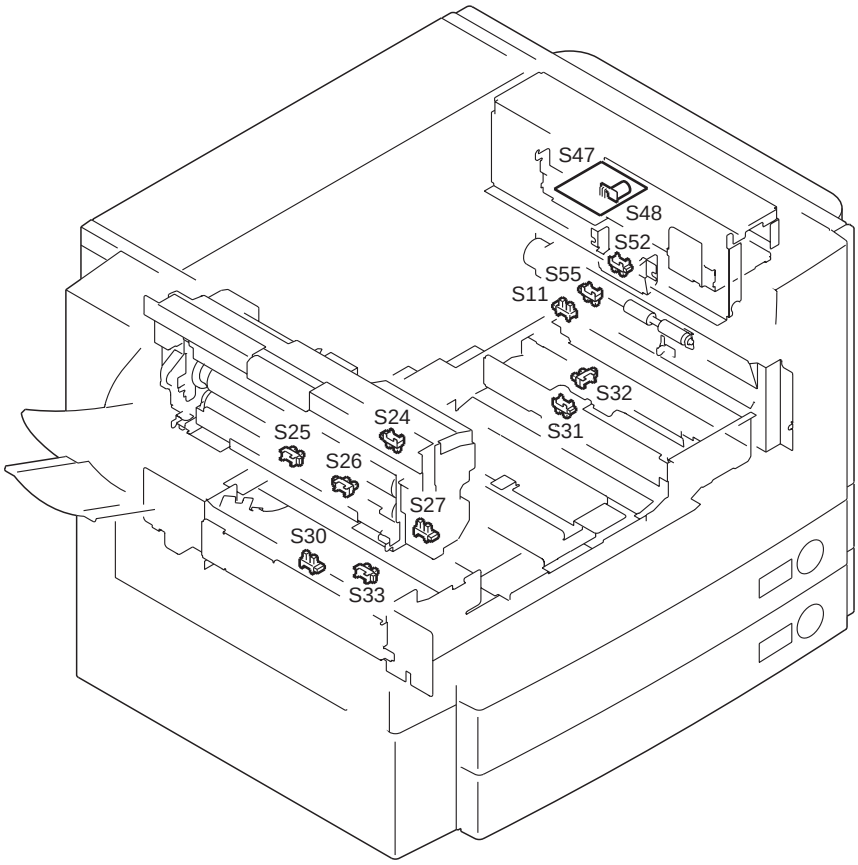


F03-100-01

Notation	Name	Notation	Name
S1	Cassette 1 size sensor	S15	Manual feed tray paper sensor
S2	Cassette 2 size sensor	S28	Eternal delivery sensor*1
S3	Cassette 1 paper sensor	S29	Delivery vertical path sensor*1
S4	Cassette 2 paper sensor	S46	Manual feed tray width sensor
S5	Cassette 1 paper level H sensor	S49	Transfer swing sensor 1
S6	Cassette 1 paper level L sensor	S50	Transfer swing sensor 2
S7	Cassette 2 paper level H sensor	S51	Transfer belt sensor
S8	Cassette 2 paper level L sensor	S56	Face-down delivery unit release sensor
S9	Cassette 1 pickup sensor		
S10	Cassette 2 pickup sensor	WTS1	Waste toner sensor (light-emitting segment)
S12	Pre-registration sensor		
S13	Transparency sensor, front	WTS2	Waste toner sensor (light-receiving segment)
S14	Transparency sensor, rear		

*1: Face-down delivery unit.

T03-100-01

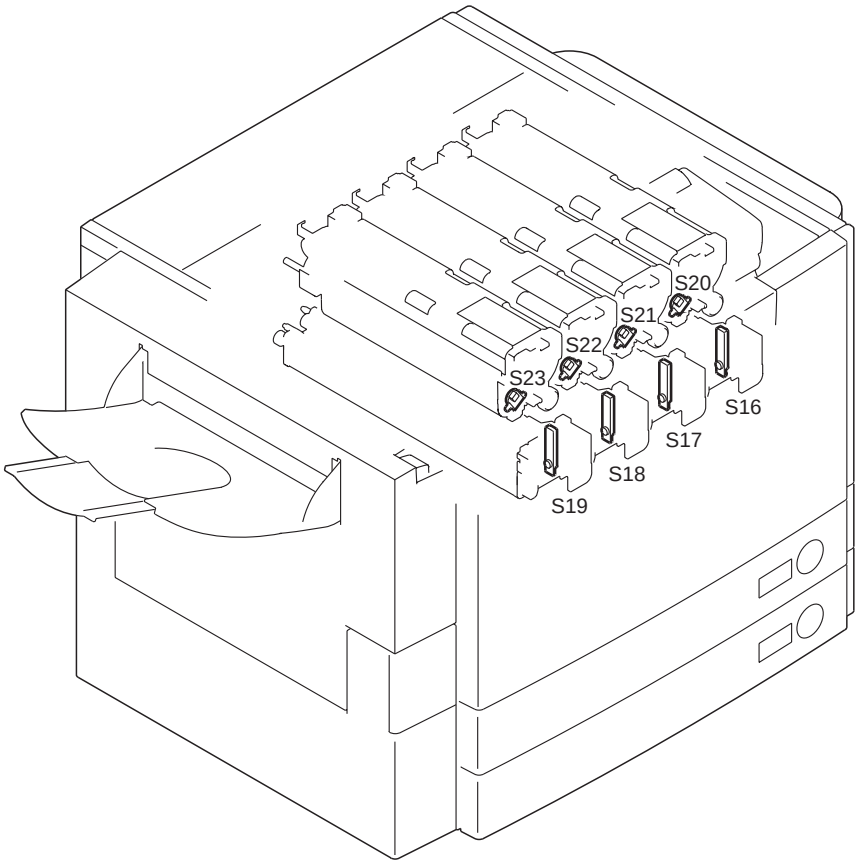


F03-100-02

Notation	Name	Notation	Name
S11	Vertical path sensor	S32	Side registration sensor*1
S24	Web length sensor	S33	Duplex unit lower senor*1
S25	Fixing assembly inlet sensor	S47	Temperature sensor
S26	Fixing assembly inlet loop sensor	S48	Humidity sensor
S27	Internal delivery sensor	S52	Post-registration sensor
S30	Duplex unit inlet sensor*1	S55	Vertical path door open/closed sensor
S31	Re-pickup sensor*1		

*1: Duplex unit.

T03-100-02

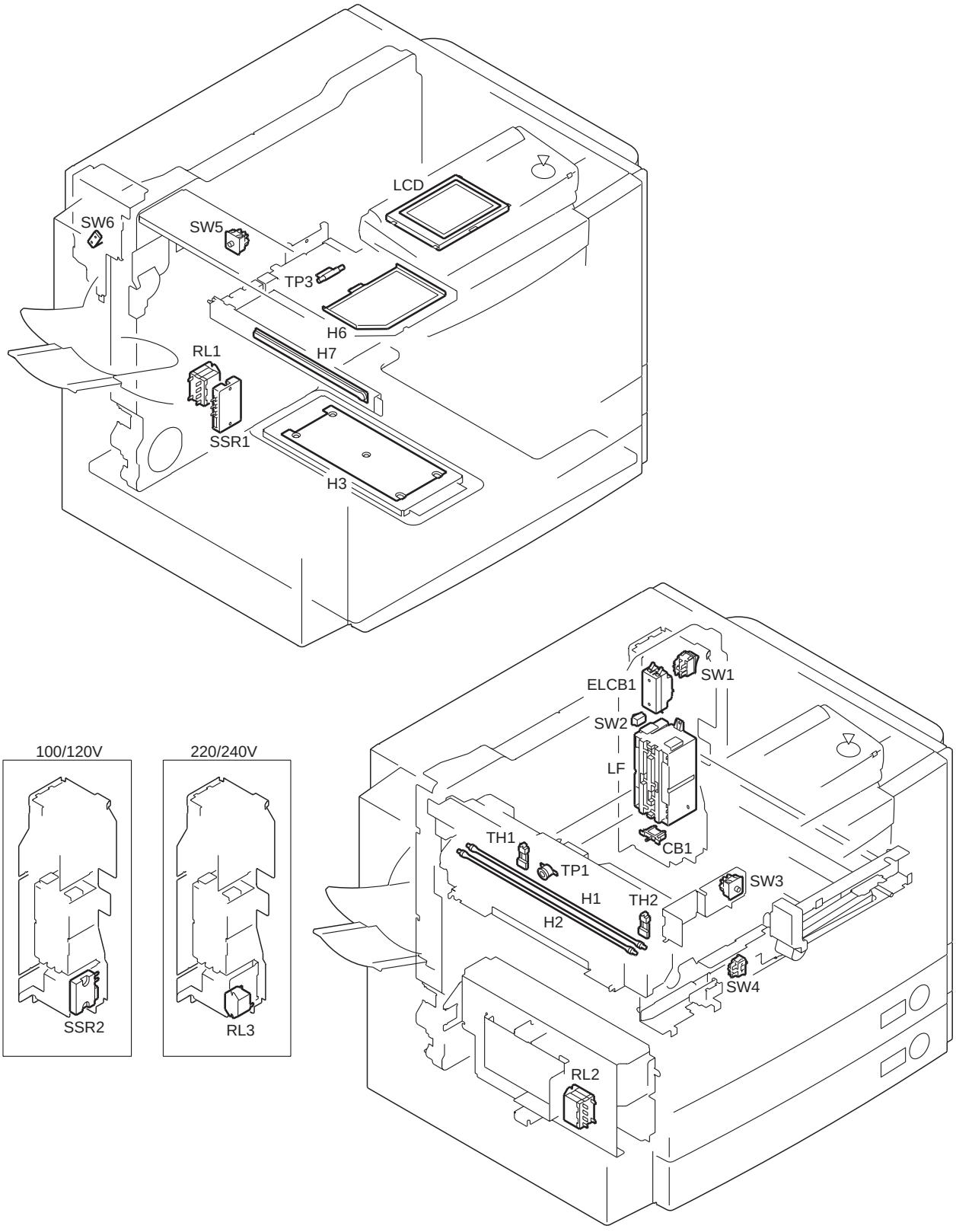


F03-100-03

Notation	Name	Notation	Name
S16	ATR sensor Y	S20	Toner level sensor Y
S17	ATR sensor M	S21	Toner level sensor M
S18	ATR sensor C	S22	Toner level sensor C
S19	ATR sensor Bk	S23	Toner level sensor Bk

T03-100-03

2 Thermistor, Lamps, and Heaters

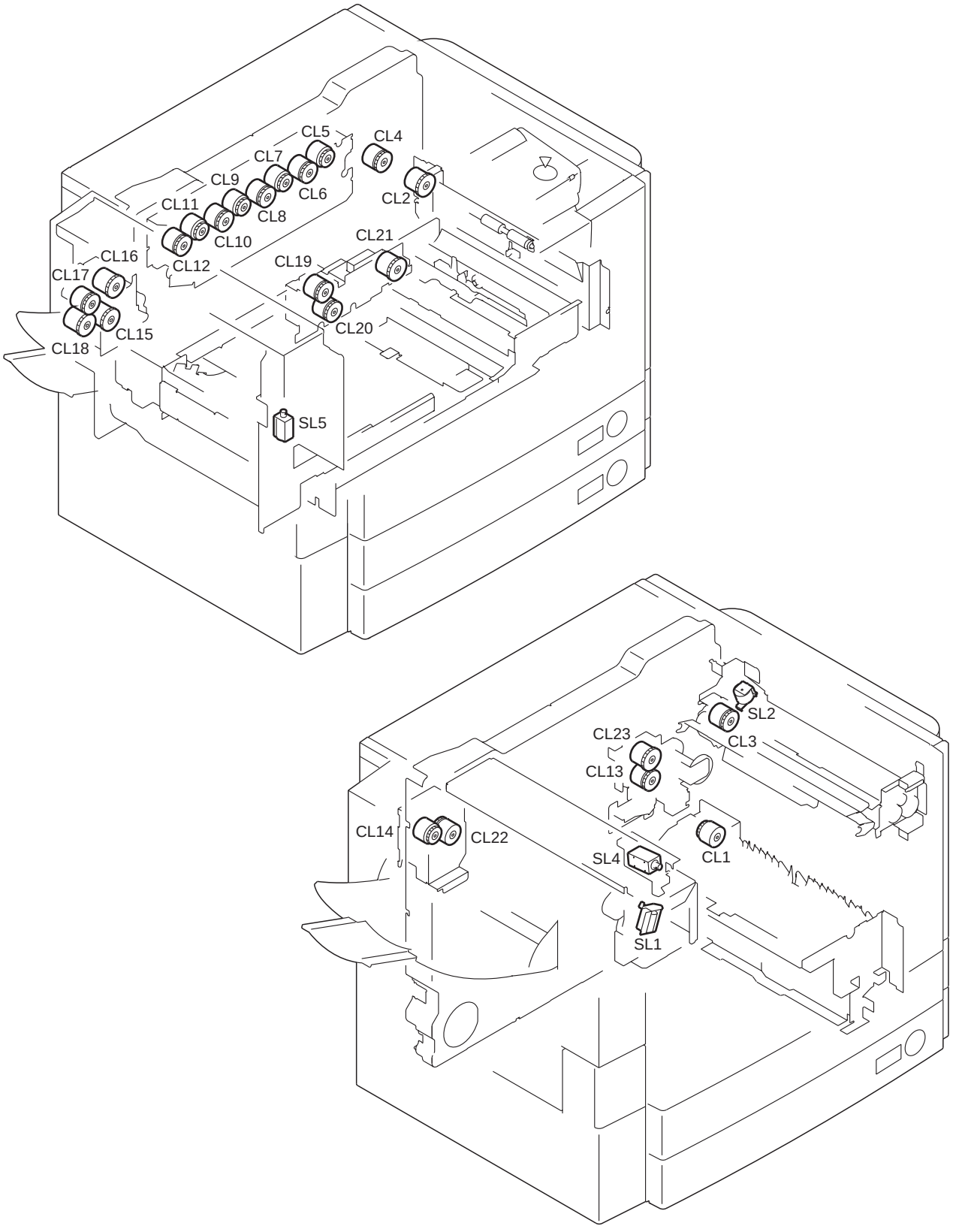

LCD
SW6
SW5
TP3
H6
H7
RL1
SSR1
H3
ELCB1
SW1
SW2
LF
CB1
TH1
TP1
H1
TH2
H2
SW3
SW4
RL2
100/120V
SSR2
220/240V
RL3

F03-200-01

Notation	Name	Notation	Name
CB1	Circuit breaker	SW1	Main power switch
ELCB1	Leakage breaker	SW2	Power save switch
H1	Fixing main heater	SW3	Front door switch
H2	Fixing sub heater	SW4	Transfer noise switch
H3	Cassette heater (accessory)	SW5	Fixing assembly door switch
H6	Environment heater 1	SW6	Face-down interlock switch
H7	Environment heater 2	TH1	Main thermistor
LCD	Touch panel display	TH2	Sub thermistor
LF	Noise filter	TP1	Fixing heater thermal switch
RL1	AC relay	TP3	Environment heater 1 thermal switch
RL2	DC relay		
RL3	Environment heater relay (230 V)	TP4	Environment heater 2 thermal switch
SSR	Fixing heater SSR		
SSR2	Environment heater SSR		

T03-200-01

3 Clutches and Solenoids



F03-300-01

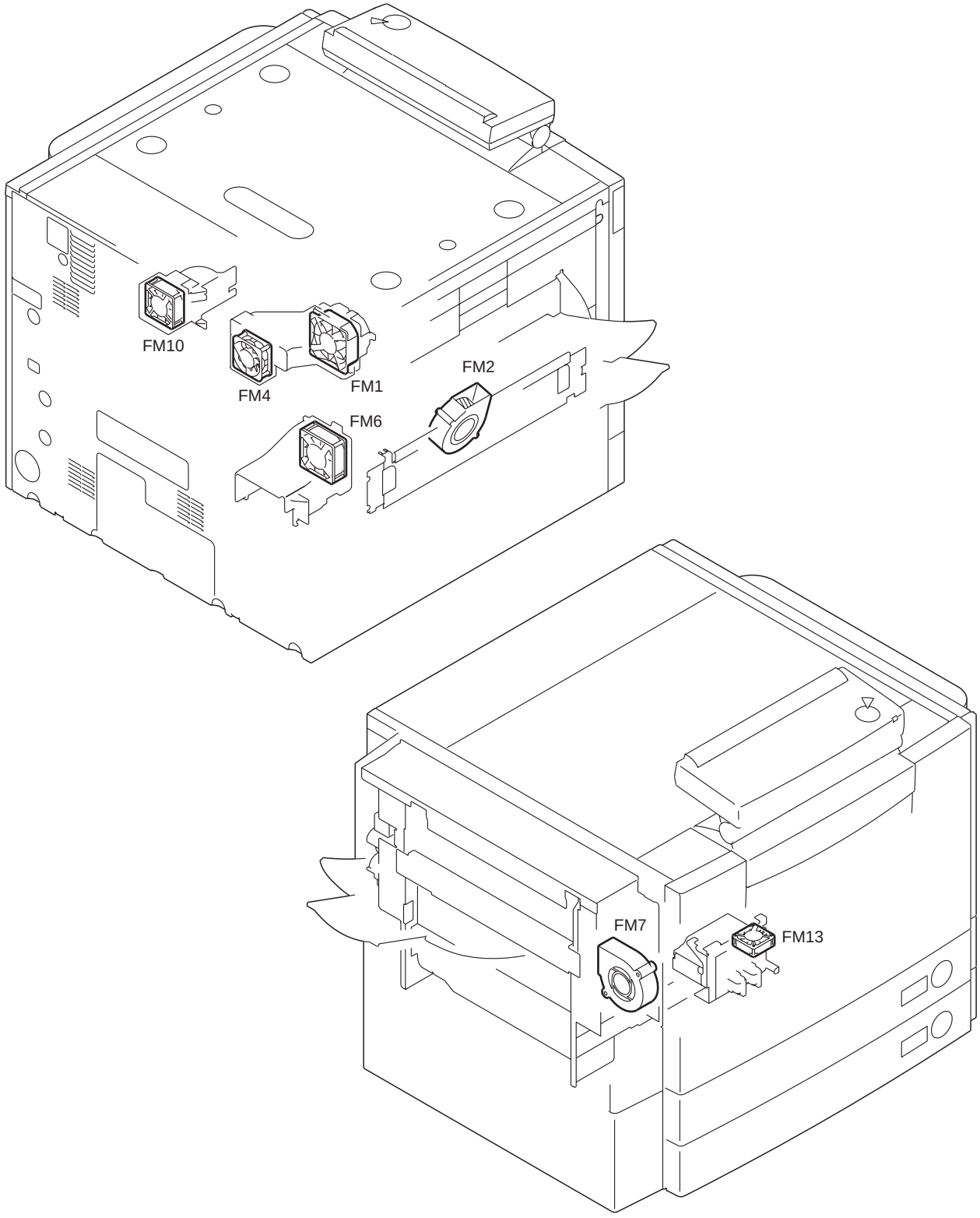
Notation	Name	Notation	Name
CL1	Pickup clutch	CL17	Reversing assembly CCW clutch*2
CL2	Vertical path clutch		
CL3	Manual feed clutch	CL18	Reversing assembly CW clutch*2
CL4	Registration clutch		
CL5	Developing cylinder clutch Y	CL19	Duplex normal speed feed clutch*1
CL6	Injection cylinder clutch Y		
CL7	Developing cylinder clutch M	CL20	Duplex double-speed feed clutch*1
CL8	Injection cylinder clutch H M		
CL9	Developing cylinder clutch C	CL21	Re-pickup clutch*1
CL10	Injection cylinder clutch C	CL22	Fixing high-speed clutch
CL11	Developing cylinder clutch Bk	CL23	Transfer swing clutch
CL12	Injection cylinder clutch Bk	SL01	Pickup solenoid
CL13	Pickup high-speed clutch	SL02	Feed holding plate locking solenoid
CL14	Fixing clutch		
CL15	Reversing assembly double-speed clutch*2	SL04	Web solenoid
		SL05	Delivery flapper solenoid*2
CL16	External delivery double-speed clutch*2		

*1: Duplex unit.

*2: Face-down delivery unit.

T03-300-01

4 Fans



F03-400-01

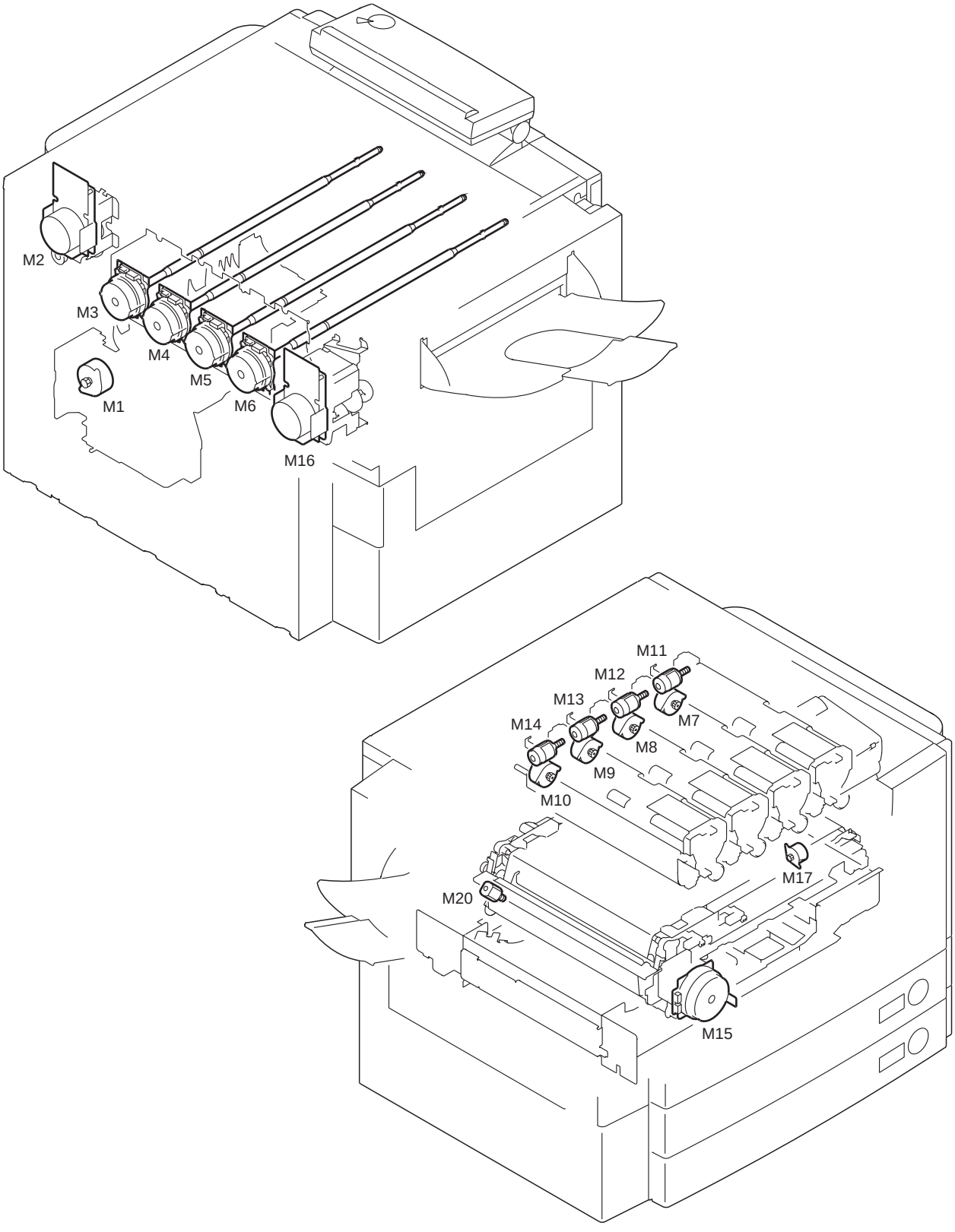
Notation	Name	Notation	Name
FM1	Fixing fan	FM7	De-curling fan*2
FM2	Delivery fan*1	FM10	Kit drive cooling fan
FM4	Machine cooling fan	FM13	Transfer motor cooling fan
FM6	Power supply cooling fan		

*1: Single-sided model only.

*2: Face-down delivery unit.

T03-400-01

5 Motors



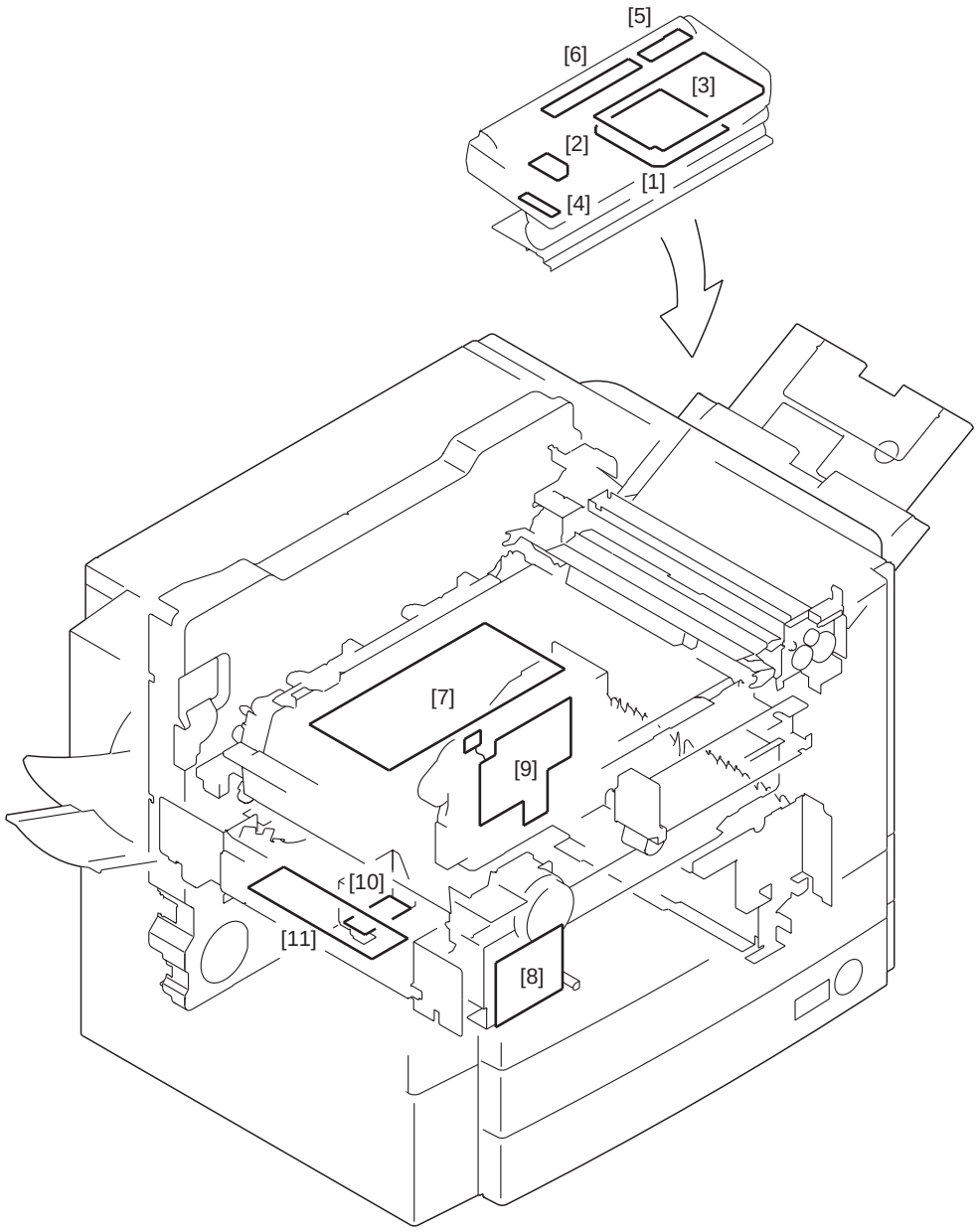
F03-500-01

Notation	Name	Notation	Name
M01	Pickup motor	M10	Hopper motor Bk
M02	Pickup main motor	M11	Cartridge motor Y
M03	Drum drive motor Y	M12	Cartridge motor M
M04	Drum drive motor M	M13	Cartridge motor C
M05	Drum drive motor C	M14	Cartridge motor Bk
M06	Drum drive motor Bk	M15	Transfer belt drive motor
M07	Hopper motor Y	M16	Delivery main motor
M08	Hopper motor M	M17	Side registration motor*1
M09	Hopper motor C	M20	Waste toner motor

*1: Duplex unit.

T03-500-01

6 PCBs

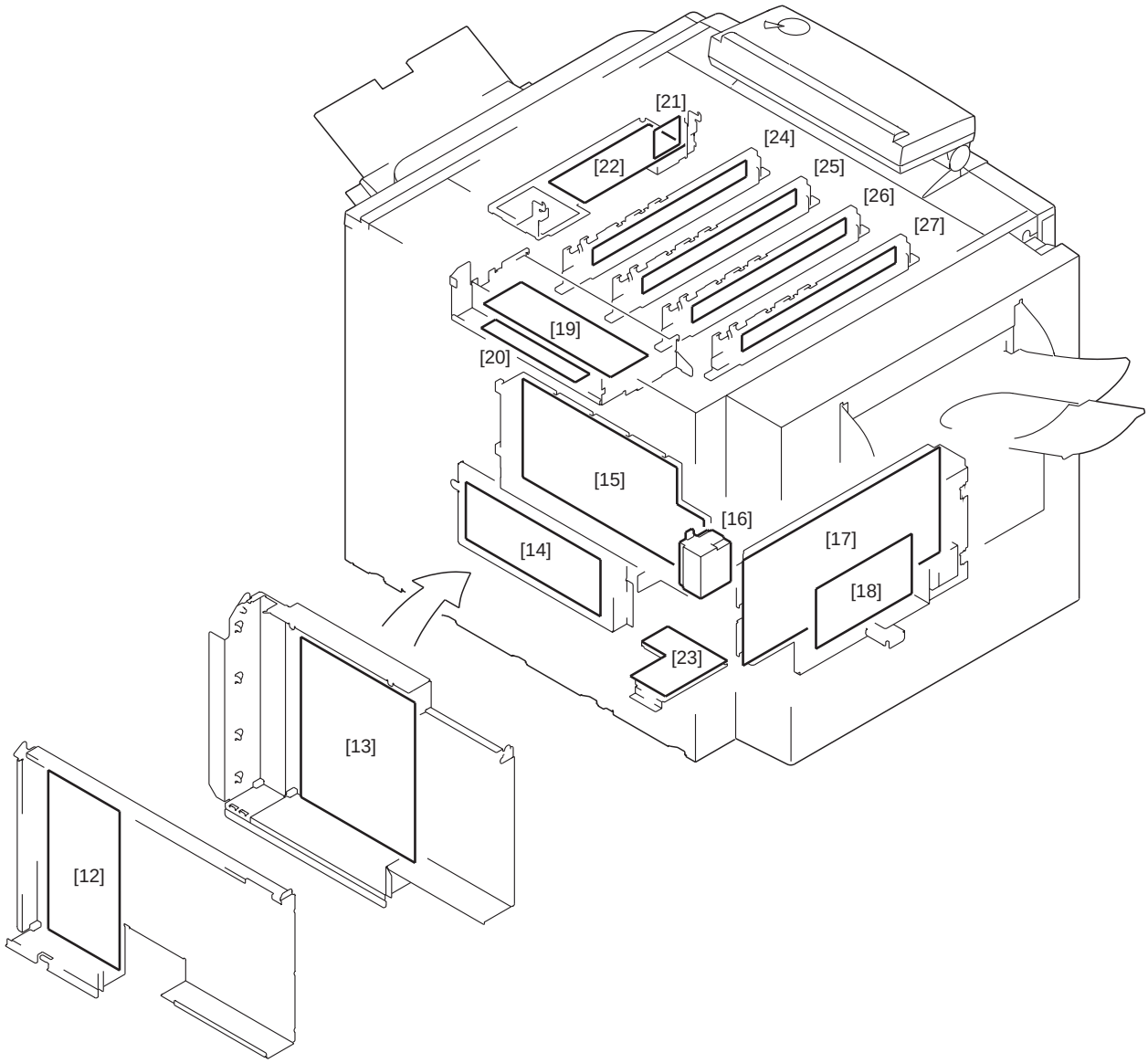


F03-600-01

Notation	Name	Notation	Name
[1]	Control panel CPU PCB	[6]	Function key PCB
[2]	Control panel inverter PCB	[7]	Transfer high-voltage PCB
[3]	Keypad PCB	[8]	Transfer drive AC generation PCB
[4]	Contrast adjustment PCB	[9]	Pickup assembly PCB
[5]	Control panel power supply switch PCB	[10]	Power supply relay PCB (230 V)
		[11]	Duplex unit driver PCB*1

*1: Duplex unit.

T03-600-01

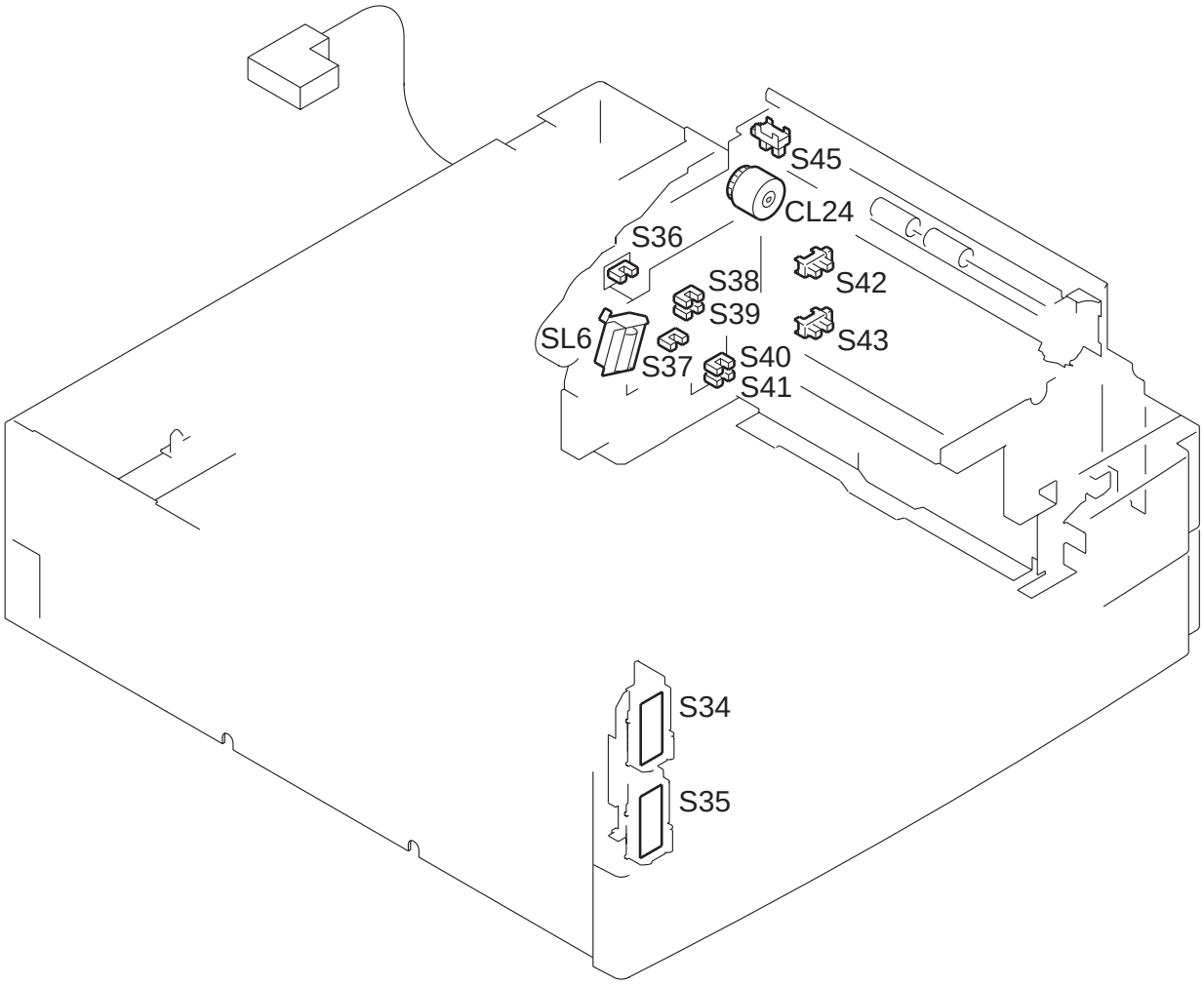


F03-600-02

Notation	Name	Notation	Name
[12]	System controller PCB	[20]	LED power supply PCB
[13]	DC controller PCB	[21]	ECO2 PCB
[14]	Serial driver PCB	[22]	Parallel I/F PCB
[15]	Image formation high-voltage PCB	[23]	Switch PCB (230 V)
[16]	Separation high-voltage PCB	[24]	Exposure LED Y
[17]	DC power supply PCB	[25]	Exposure LED M
[18]	Power supply PCB	[26]	Exposure LED C
[19]	Drum drive AC generation PCB	[27]	Exposure LED Bk

T03-600-02

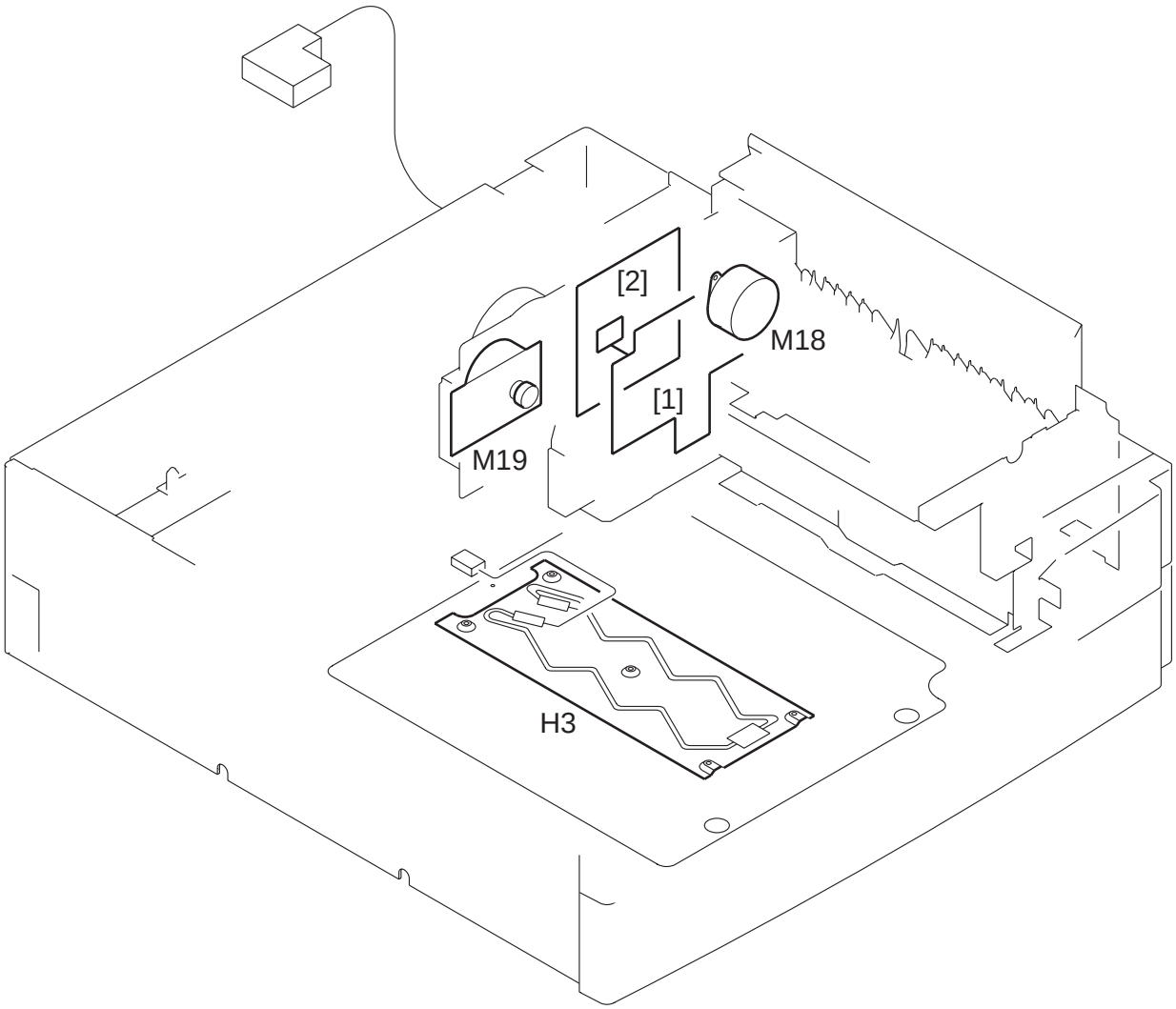
7 Cassette Pedestal



F03-700-01

Notation	Name	Notation	Name
CL24	Pickup clutch	S40	Cassette 4 paper level H sensor
SL6	Pickup solenoid	S41	Cassette 4 paper level L sensor
S34	Cassette 3 size sensor	S42	Cassette 3 pickup sensor
S35	Cassette 4 size sensor	S43	Cassette 4 pickup sensor
S36	Cassette 3 paper sensor	S44	Vertical path paper sensor
S37	Cassette 4 paper sensor	S45	Right door open/closed sensor
S38	Cassette 3 paper level H sensor		
S39	Cassette 3 paper level L paper sensor		

T03-700-01



F03-700-02

Notation	Name	Notation	Name
H3	Pedestal heater (accessory)	[1]	Pedestal pickup assembly PCB
M18	Pickup motor	[2]	Pedestal controller PCB
M19	Pedestal main motor		

T03-700-02

8 Variable Resistors (VR), Light-Emitting Diodes, and Check Pins by PCB

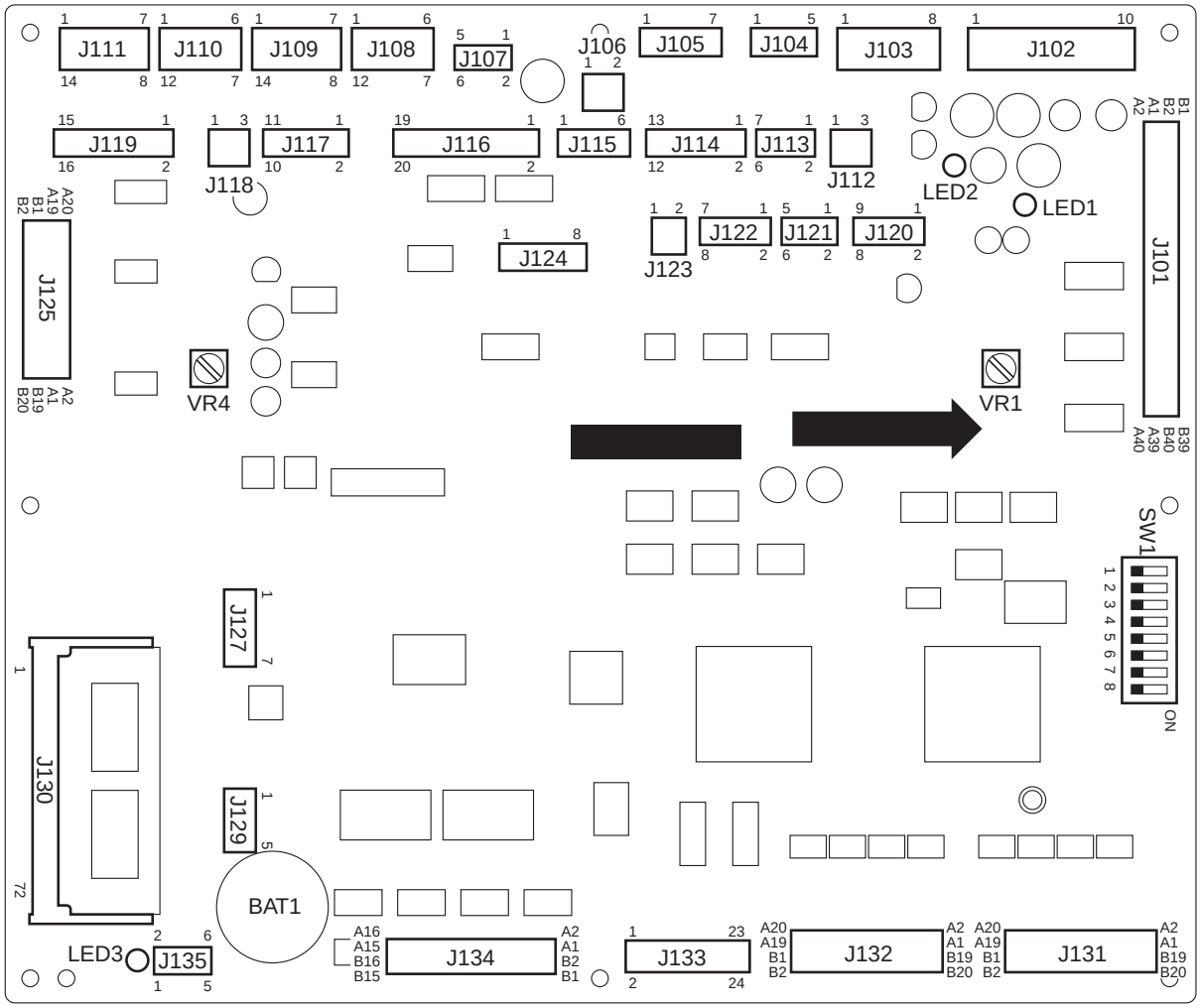
Of the variable resistors (VR), light-emitting diodes (LED), and check pins used in the machine, those needed in the field are discussed:

Those VRs and check pins not discussed herein are for use at the factory, requiring special tools and high accuracy. Do not touch them in the field.

Some LEDs hold leakage current and emit dim light even when off. This is a normal condition and must be kept in mind.

⊘ ···VRs that may be used into the field.
⊘ ···VRs that must not be used in the field.

8.1 Controller PCB

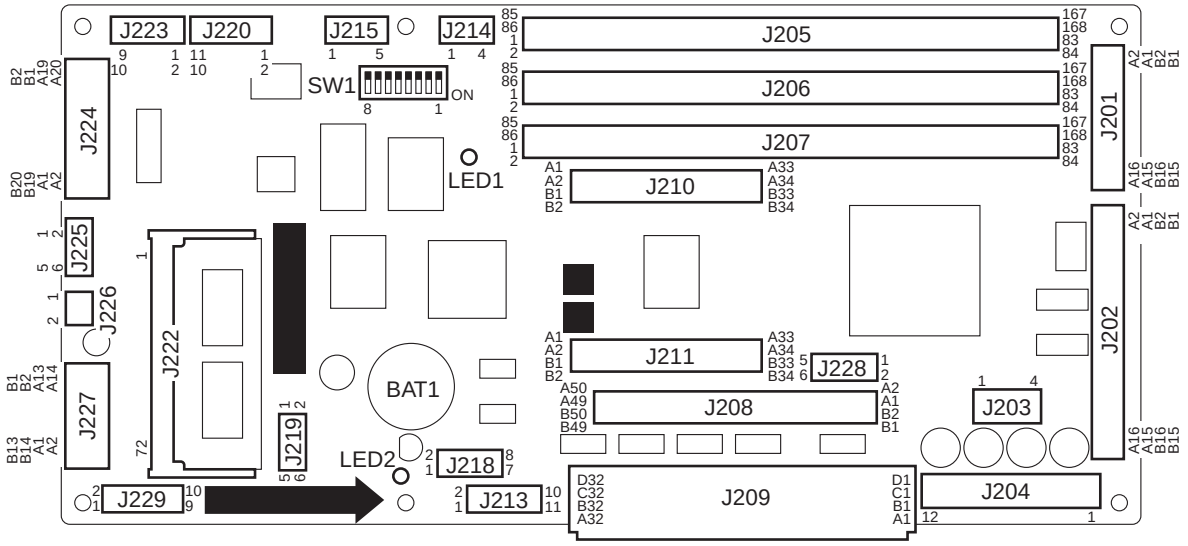


F03-801-01

Notation	Name	Description
LED1	24V check LED	ON, if 24-V power is present.
LED2	5V check LED	ON, if 5-V power is present.
LED3	CPU operation check LED	Flashes at about 1-sec intervals, if the CPU has warmed up successfully. Flashes at short intervals, if a RAM check error is found while the CPU is warming up. On, if the CPU fails to warm up.
SW1	For factory use	

T03-801-01

8.2 System Controller PCB

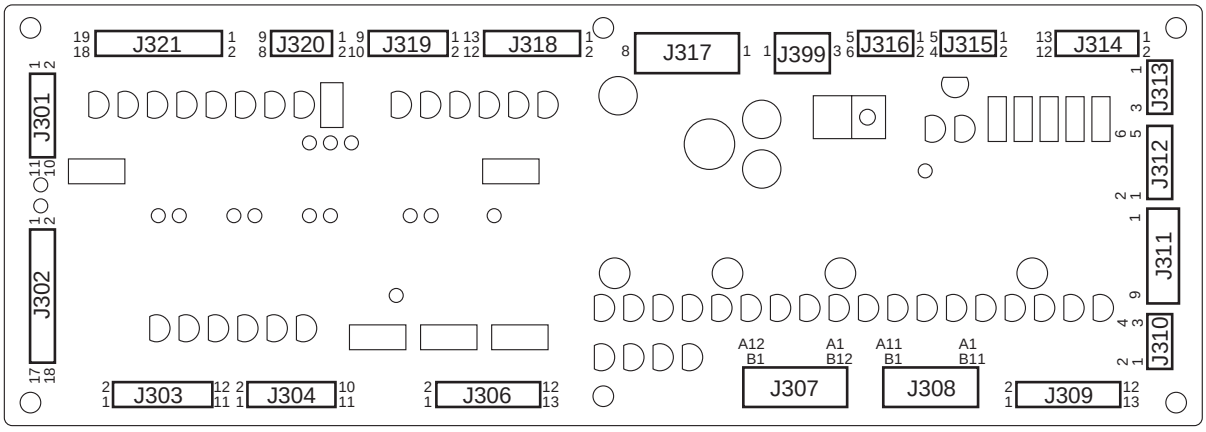


F03-802-01

Notation	Name	Description
LED1	5V check LED	On, if 5-V power is present.
LED2	CPU operation check LED	Flashes at about 1-sec intervals, if the CPU has warmed up successfully. Flashes, if a RAM check error is found while the CPU is warming up. On, if the CPU fails to warm up.
SW1	For factory use	

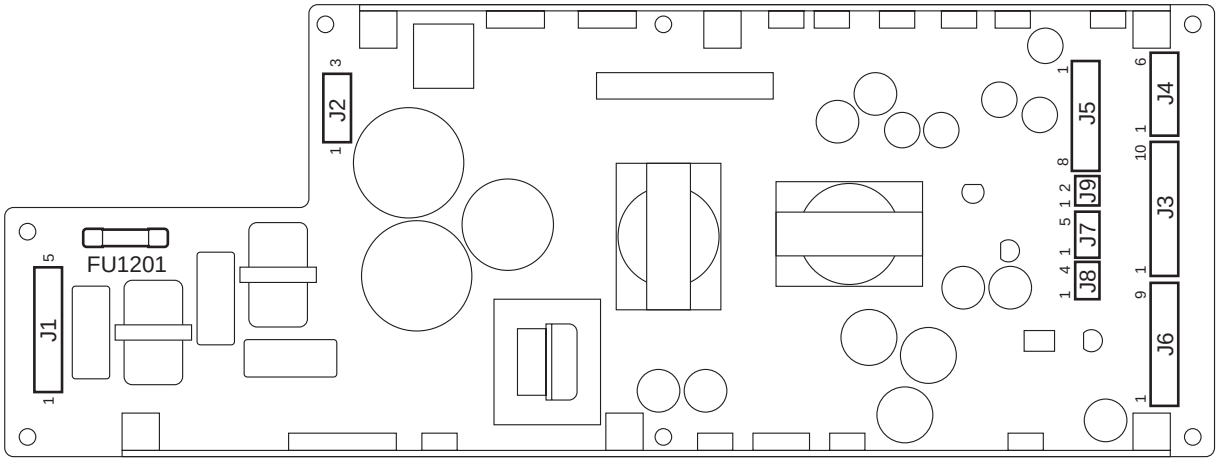
T03-802-01

8.3 Serial Driver PCB



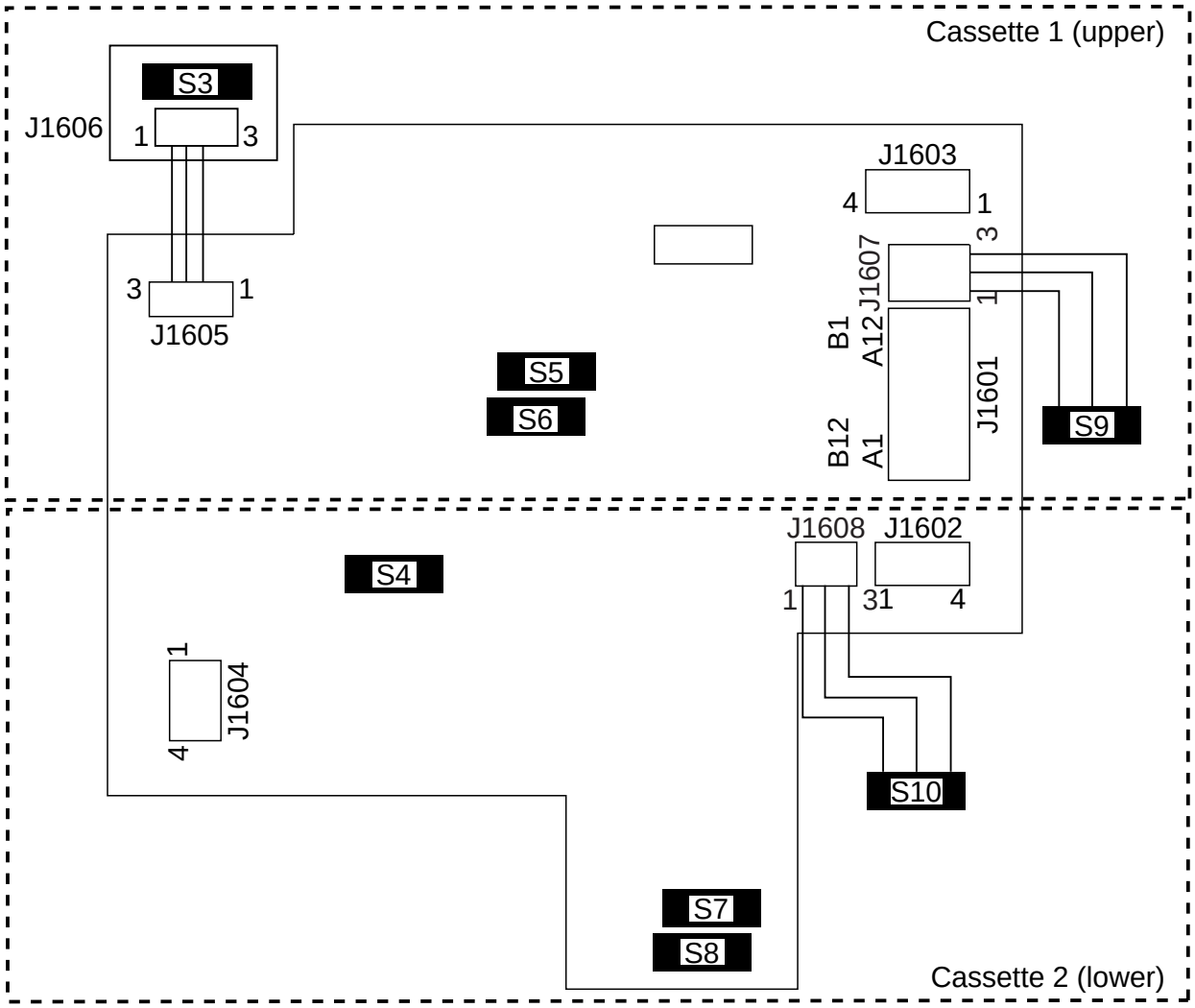
F03-803-01

8.4 DC Power Supply PCB



F03-804-01

8.5 Pickup Assembly PCB

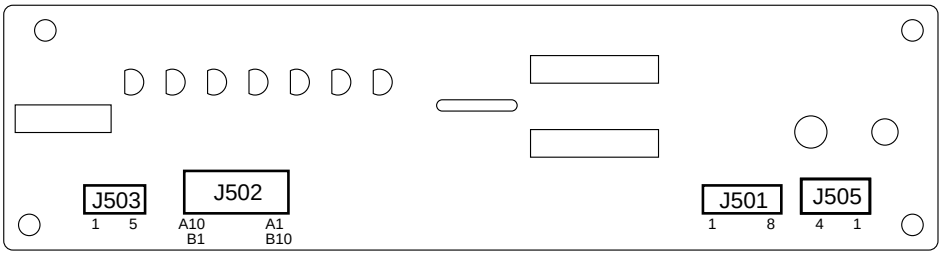


F03-805-01

Notation	Sensor	Notation	Sensor
S3	Cassette 1 paper sensor	S7	Cassette 2 paper level H sensor
S4	Cassette 2 paper sensor	S8	Cassette 2 paper level L sensor
S5	Cassette 1 paper level H sensor	S9	Cassette 1 pickup sensor
S6	Cassette 1 paper level L sensor	S10	Cassette 2 pickup sensor

T03-805-01

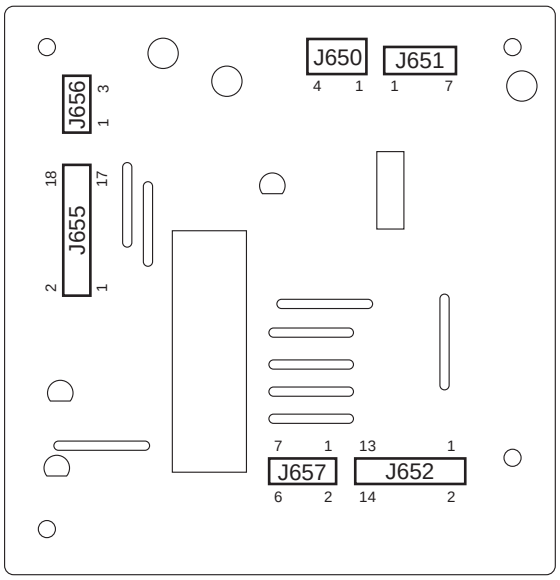
8.6 Duplex Driver PCB (duplex model only)



F03-806-01

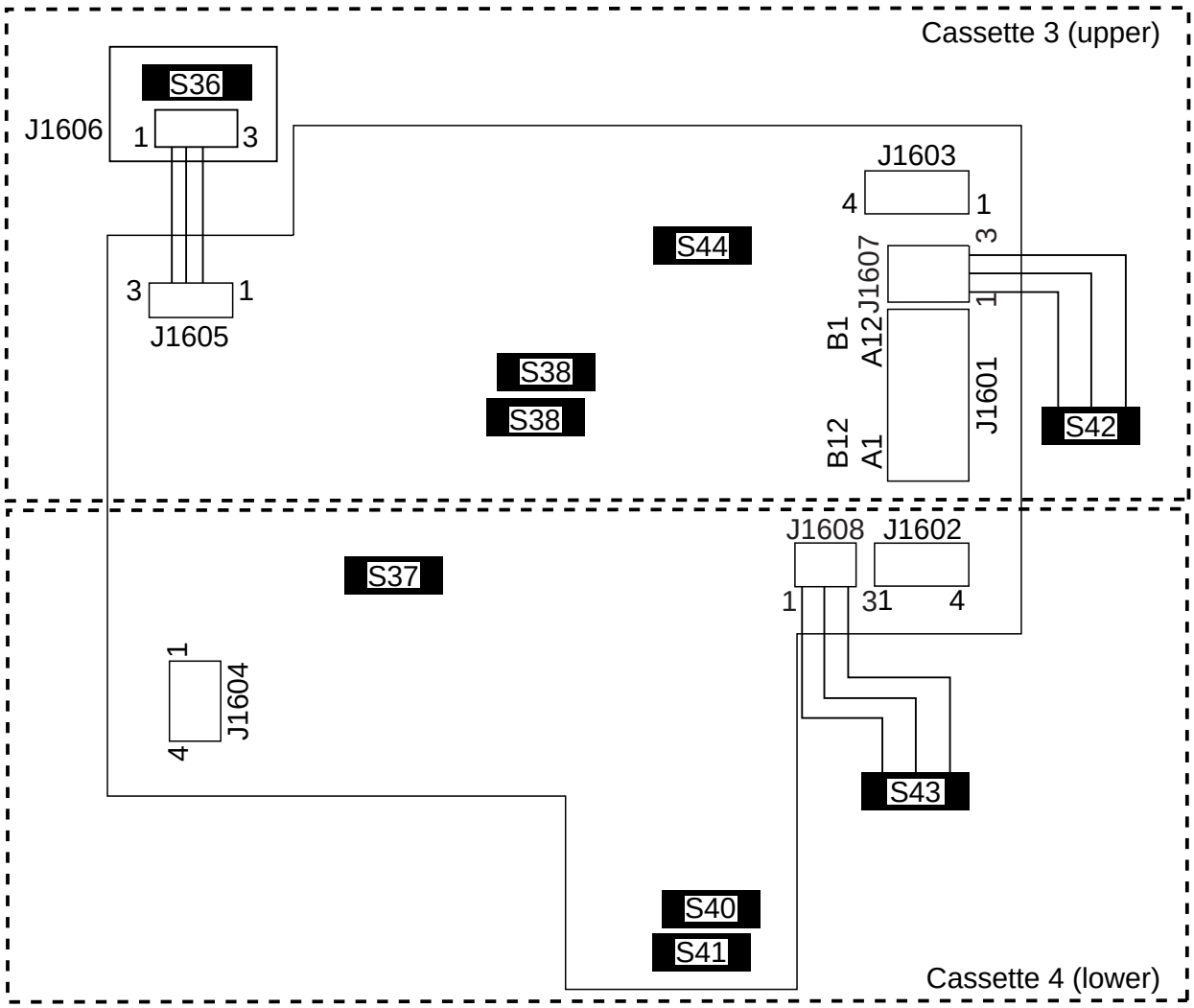
8.7 Cassette Pedestal

a. Pedestal Controller PCB



F03-807-01

b. Pedestal Pickup Assembly PCB



F03-807-02

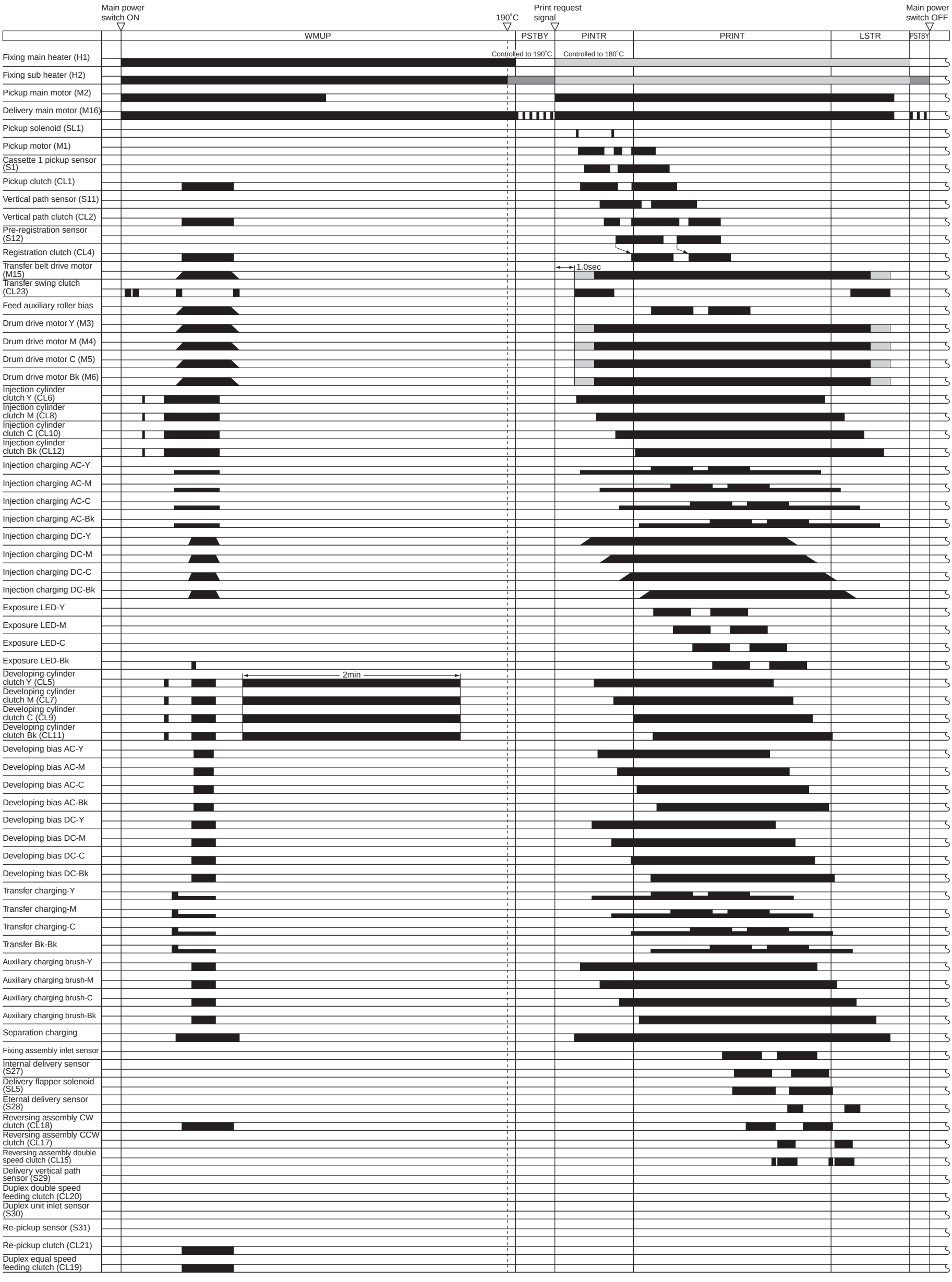
Notation	Sensor	Notation	Sensor
S36	Cassette 3 paper sensor	S41	Cassette 4 paper level 0 sensor
S37	Cassette 4 paper sensor	S42	Cassette 3 pickup sensor
S38	Cassette 3 paper level 1 sensor	S43	Cassette 4 pickup sensor
S39	Cassette 3 paper level 0 sensor	S44	Vertical path paper sensor
S40	Cassette 4 paper level 1 sensor		

T03-807-02

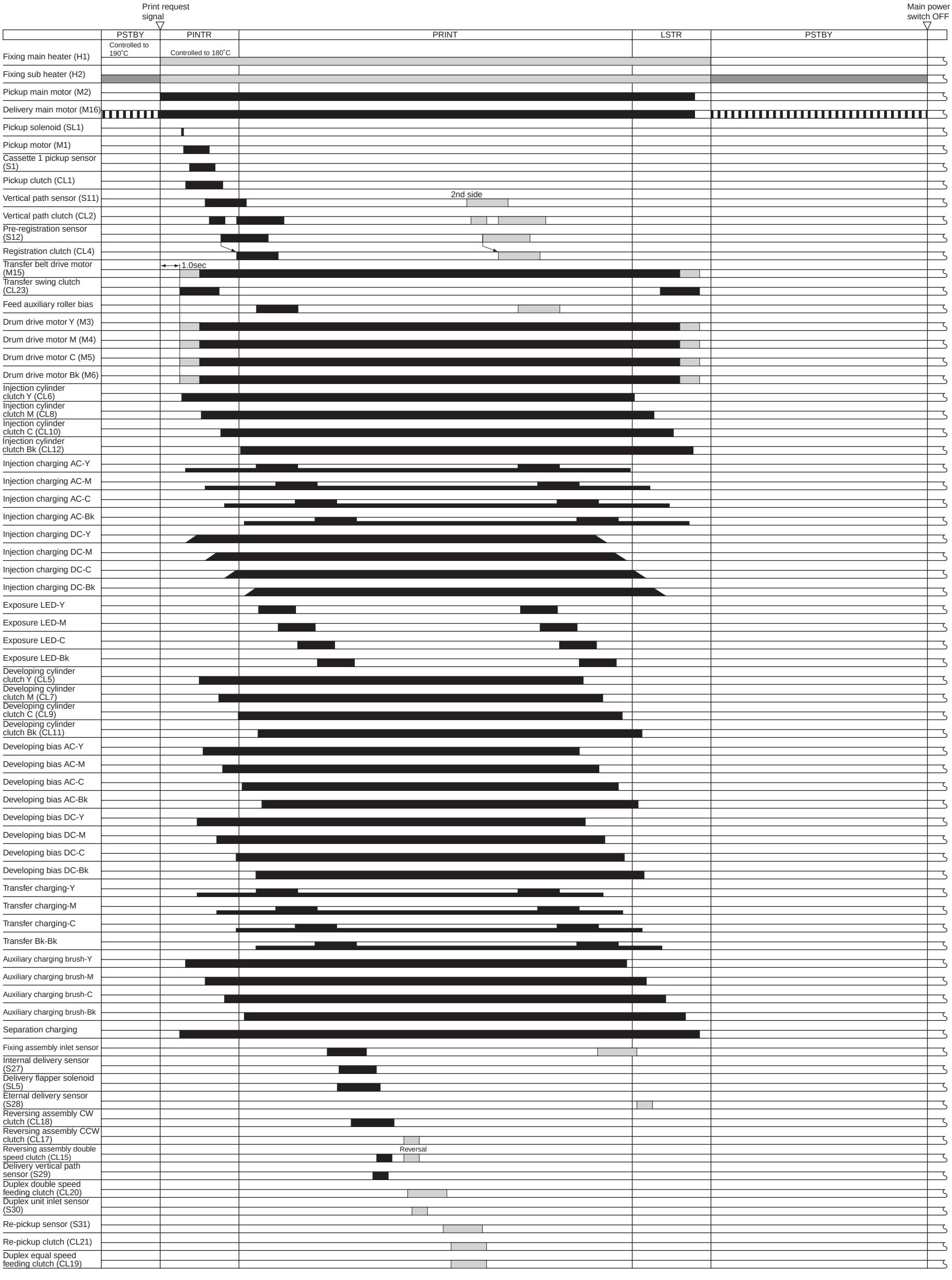
APPENDIX

1 General Timing Chart

Conditions: full-color, cassette; A4, single-sided (2 prints, continuous)



Conditions: full-color, cassette 1; A4, double-sided



2 Signals and Abbreviations

2.1 Signals

2.1.1 Printer

2SIDE_OK	Duplex driver PCB connection detection signal
AC_RL	AC relay drive signal
ATR_C	ATR sensor C output signal
ATR_CNT_C	ATR sensor C drive signal
ATR_CNT_K	ATR sensor Bk drive signal
ATR_CNT_M	ATR sensor M drive signal
ATR_CNT_Y	ATR sensor Y drive signal
ATR_K	ATR sensor Bk output signal
ATR_M	ATR sensor M output signal
ATR_Y	ATR sensor Y output signal
CD0	Exposure LED-C image data signal 0
CD1	Exposure LED-C image data signal 1
CD2	Exposure LED-C image data signal 2
CD3	Exposure LED-C image data signal 3
CD4	Exposure LED-C image data signal 4
CD5	Exposure LED-C image data signal 5
CD6	Exposure LED-C image data signal 6
CFAI-1	Exposure LED-C image data transfer signal 1
CFAI-2	Exposure LED-C image data transfer signal 2
CFAI-S	Exposure LED-C activation start signal
CFAI-I	Exposure LED-C activation enable signal
CL1_ON	Pickup clutch drive signal
CL10_C_ON	Injection cylinder clutch C drive signal
CL11_Bk_ON	Developing cylinder clutch Bk drive signal
CL12_Bk_ON	Injection cylinder clutch Bk drive signal
CL13_ON	Pickup higher speed clutch drive signal
CL14_ON	Fixing clutch drive signal
CL15_ON	Reversing assembly double speed clutch drive signal
CL16_ON	External delivery double speed clutch drive signal
CL17_ON	Reversing assembly CCW clutch drive signal
CL18_ON	Reversing assembly CW clutch drive signal
CL19_ON	Duplex equal speed feeding clutch drive signal
CL2_ON	Vertical path clutch drive signal
CL20_ON	Duplex double speed feeding clutch drive signal
CL21_ON	Re-pickup clutch drive signal
CL22_ON	Fixing higher speed clutch drive signal
CL23_ON	Transfer swing clutch drive signal
CL3_ON	Manual feed clutch drive signal
CL4_ON	Registration clutch drive signal

CL5_Y_ON	Developing cylinder clutch Y drive signal
CL6_Y_ON	Injection cylinder clutch Y drive signal
CL7_M_ON	Developing cylinder clutch M drive signal
CL8_M_ON	Injection cylinder clutch M drive signal
CL9_C_ON	Developing cylinder clutch C drive signal
COPY_RMT	High-voltage output enable signal
CSCLK	C image data input sync clock signal
CSRST	C image data latch signal
CVGA	C-LED chip ground signal
DC_RL	DC relay drive signal
DVAC_C	Developing AC bias C output signal
DVAC_K	Developing AC bias M output signal
DVAC_M	Developing AC bias M output signal
DVAC_Y	Developing AC bias Y output signal
ECO_CONNECT*	ECO2 PCB connection detection signal
EXUNT_SENS	Face-down delivery unit connection detection signal
FIXDR	Fixing door open/closed detection signal
FM1_LCK	Fixing fan locked detection signal
FM1_ON	Fixing fan full speed rotation signal
FM10_LCK	Kit drive cooling fan locked detection signal
FM10_ON	Kit drive cooling fan drive signal
FM13_LCK	Transfer motor cooling fan locked detection signal
FM13_ON	Transfer motor cooling fan drive signal
FM2_LCK	Delivery fan locked detection signal
FM2_ON	Delivery fan drive signal
FM4_LCK	Machine cooling fan locked detection signal
FM4_ON	Machine cooling fan drive signal
FM6_LCK	Power supply cooling fan locked detection signal
FM6_ON	Power supply cooling fan drive signal
FM7_LCK	De-curling fan locked detection signal
FM7_ON	De-curling fan drive signal
FRK_ON	Anti-flicker ON/OFF signal
FRNTDR	Front door open/closed detection signal
H1_ERR	Fixing main heater error detection signal
H1_ON	Fixing main heater drive signal
H2_ERR	Fixing sub heater error detection signal
H2_ON	Fixing sub heater drive signal
HUM	Humidity detection signal
KD0	Exposure LED-Bk image data signal 0
KD1	Exposure LED-Bk image data signal 1
KD2	Exposure LED-Bk image data signal 2
KD3	Exposure LED-Bk image data signal 3
KD4	Exposure LED-Bk image data signal 4
KD5	Exposure LED-Bk image data signal 5

KD6	Exposure LED-Bk image data signal 6
KFAI-1	Exposure LED-Bk image data signal 1
KFAI-2	Exposure LED-Bk image data signal 2
KFAI-S	Exposure LED-Bk activation start signal
KFAI-I	Exposure LED-Bk activation enable signal
KSCLK	Bk image data input sync clock signal
KSRST	Bk image data latch signal
KVGA	Bk LED chip ground signal
M1_A	Pickup motor drive signal A
M1_B	Pickup motor drive signal B
M1-I0	Pickup motor current switch signal I0
M1_I1	Pickup motor current switch signal I1
M10_Bk_A	Hopper motor Bk drive signal A
M10_Bk_A*	Hopper motor Bk drive signal A*
M10_Bk_B	Hopper motor Bk drive signal B
M10_Bk_B*	Hopper motor Bk drive signal B*
M11_Y_ON	Cartridge motor Y drive signal
M12_M_ON	Cartridge motor M drive signal
M13_C_ON	Cartridge motor C drive signal
M14_Bk_ON	Cartridge motor Bk drive signal
M15_ENC_A	Transfer belt drive motor encoder signal A
M15_ENC_B	Transfer belt drive motor encoder signal B
M15_ENC_C	Transfer belt drive motor encoder signal C
M15_PLS_A	Transfer belt drive motor drive pulse signal A
M15_PLS_B	Transfer belt drive motor drive pulse signal B
M16_LCK	Delivery main motor locked detection signal
M16_ON	Delivery main motor drive signal
M16_SPDA	Delivery main motor speed switch signal A
M16_SPDB	Delivery main motor speed switch signal B
M17_A	Side registration motor drive signal A
M17_A*	Side registration motor drive signal A*
M17_B	Side registration motor drive signal B
M17_B*	Side registration motor drive signal B*
M2_LCK	Pickup main motor locked detection signal
M2_ON	Pickup main motor drive signal
M2_SPDA	Pickup main motor speed switch signal A
M2_SPDB	Pickup main motor speed switch signal B
M20_DT	Waste toner motor locked detection signal
M20_ON	Waste toner motor drive signal
M20_OPN	Waste toner motor drive signal
M3_Y_ENCA	Drum drive motor Y encoder signal A
M3_Y_ENCB	Drum drive motor Y encoder signal B
M3_Y_ENCC	Drum drive motor Y encoder signal C
M3_Y_PLSA	Drum drive motor Y drive pulse signal A

M3_Y_PLSB	Drum drive motor Y drive pulses signal B
M4_M_ENCA	Drum drive motor M encoder signal A
M4_M_ENCB	Drum drive motor M encoder signal B
M4_M_ENCC	Drum drive motor M encoder signal C
M4_M_PLSA	Drum drive motor M drive pulse signal A
M4_M_PLSB	Drum drive motor M drive pulse signal B
M5_C_ENCA	Drum drive motor C encoder signal A
M5_C_ENCB	Drum drive motor C encoder signal B
M5_C_ENCC	Drum drive motor C encoder signal C
M5_C_PLSA	Drum drive motor C drive pulse signal A
M5_C_PLSB	Drum drive motor C drive pulse signal B
M6_Bk_ENCA	Drum drive motor Bk encoder signal A
M6_Bk_ENCB	Drum drive motor Bk encoder signal B
M6_Bk_ENCC	Drum drive motor Bk encoder signal C
M6_Bk_PLSA	Drum drive motor Bk drive pulse signal A
M6_Bk_PLSB	Drum drive motor Bk drive pulse signal B
M7_Y_A	Hopper motor Y drive signal A
M7_Y_A*	Hopper motor Y drive signal A*
M7_Y_B	Hopper motor Y drive signal B
M7_Y_B*	Hopper motor Y drive signal B*
M8_M_A	Hopper motor M drive signal A
M8_M_A*	Hopper motor M drive signal A*
M8_M_B	Hopper motor M drive signal B
M8_M_B*	Hopper motor M drive signal B*
M9_C_A	Hopper motor C drive signal A
M9_C_A*	Hopper motor C drive signal A*
M9_C_B	Hopper motor C drive signal B
M9_C_B*	Hopper motor C drive signal B*
MD0	Exposure LED-M image data signal 0
MD1	Exposure LED-M image data signal 1
MD2	Exposure LED-M image data signal 2
MD3	Exposure LED-M image data signal 3
MD4	Exposure LED-M image data signal 4
MD5	Exposure LED-M image data signal 5
MD6	Exposure LED-M image data signal 6
MFAI-1	Exposure LED-M image data transfer signal 1
MFAI-2	Exposure LED-M image data transfer signal 2
MFAI-S	Exposure LED-M activation start signal
MFAI-I	Exposure LED-M activation enable signal
MSCLK	M image data input sync clock signal
MSRST	M image data latch signal
MVGA	M-LED chip ground signal
PKTC_OK	Drum unit-C connection signal
PKTCSC	Drum unit ROM-C control signal

PKTCSK	Drum unit ROM-Bk control signal
PKTCSM	Drum unit ROM-M control signal
PKTCSY	Drum unit ROM-Y control signal
PKTK_OK	Drum unit-Bk connection signal
PKTM_OK	Drum unit-M connection signal
PKTY_OK	Drum unit-Y connection signal
PRBS_AD	High-voltage output monitor signal
PRMT_ON	DC power ON signal
RL3_OFF	RL3 drive signal
S1_SIZE0	Cassette 1 size detection signal 0
S1_SIZE1	Cassette 1 size detection signal 1
S1_SIZE2	Cassette 1 size detection signal 2
S1_SIZE3	Cassette 1 size detection signal 3
S1_SIZE4	Cassette 1 size detection signal 4
S10_DT	Cassette 2 pickup detection signal
S11_DT	Vertical path paper detection signal
S12_DT	Pre-registration paper detection signal
S13_DT	Transparency detection signal (front)
S13_ON	Transparency sensor drive signal (front)
S14_DT	Transparency detection signal (rear)
S14_ON	Transparency sensor drive signal (rear)
S15_DT	Manual fee paper signal
S2_SIZE0	Cassette 2 size detection signal 0
S2_SIZE1	Cassette 2 size detection signal 1
S2_SIZE2	Cassette 2 size detection signal 2
S2_SIZE3	Cassette 2 size detection signal 3
S2_SIZE4	Cassette 2 size detection signal 4
S20_Y	Toner level Y detection signal
S20_M	Toner level M detection signal
S22_C	Toner level C detection signal
S23_Bk	Toner level Bk detection signal
S24_DT	Web length detection signal
S25_DT	Fixing assembly inlet detection signal
S26_DT	Fixing assembly inlet arch detection signal
S27_DT	Internal delivery detection signal
S28_DT	External delivery detection signal
S29_DT	Delivery vertical path detection signal
S3_DT	Cassette 1 paper detection signal
S30_DT	Duplex unit inlet paper detection signal
S31_DT	Re-pickup detection signal
S32_DT	Side registration detection signal
S33_DT	Duplex unit lower paper detection signal
S4_DT	Cassette 2 paper detection signal
S46_SIZE	Multifeeder paper width detection signal

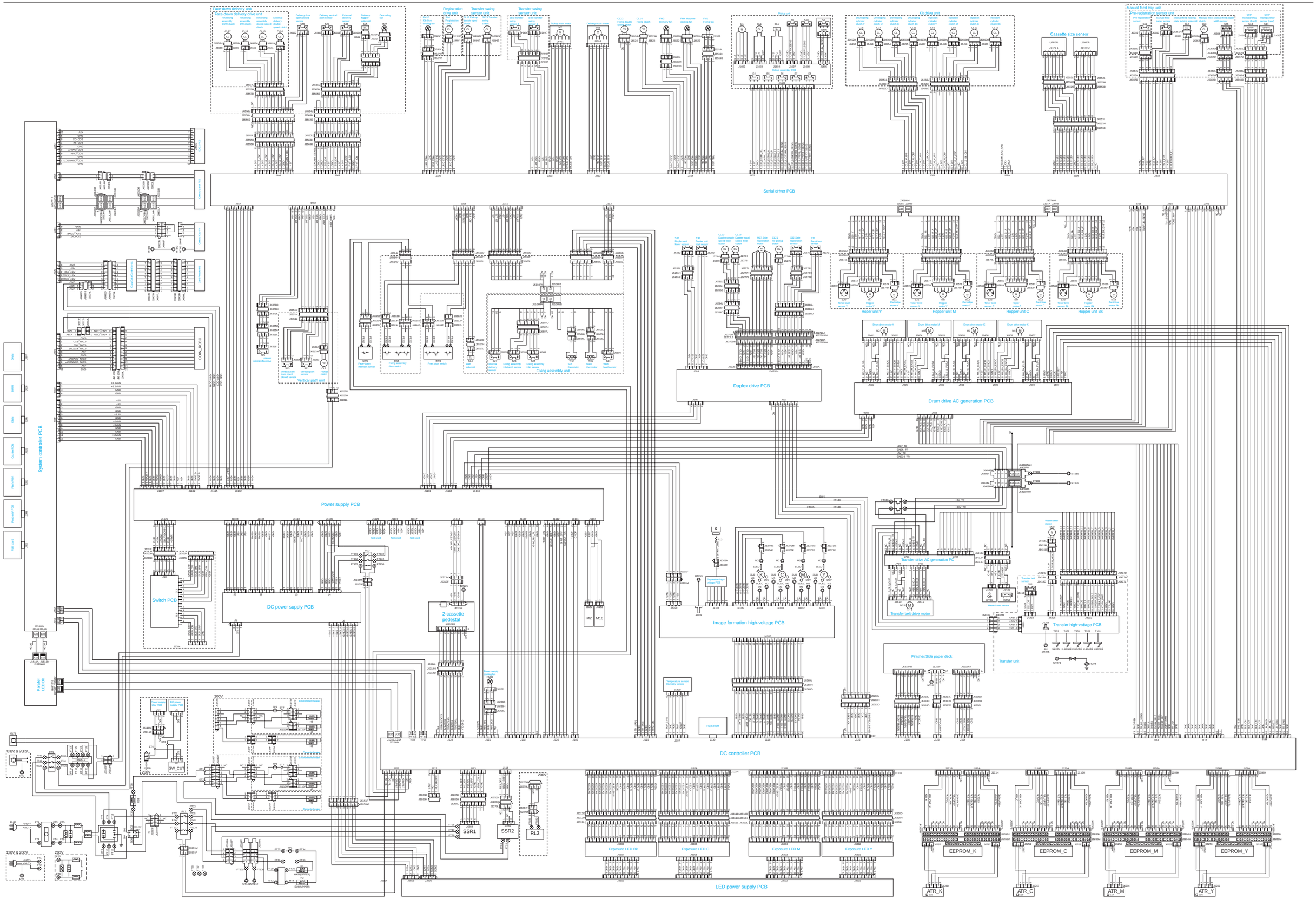
S49_DT	Transfer swing detection signal 1
S5_DT	Cassette 1 paper level H detection signal
S50_DT	Transfer swing detection signal 2
S51_DT	Transfer belt home position detection signal
S52_DT	Post-registrant paper detection signal
S55_DT	Vertical path door open/closed detection signal
S56_DT	Delivery door open/closed detection signal
S6_DT	Cassette 1 paper level L detection signal
S7_DT	Cassette 2 paper level H detection signal
S8_DT	Cassette 2 paper level L detection signal
S9_DT	Cassette 1 pickup signal
SHUT_OFF	Main power switch OFF signal
SL_DC	Exposure LED-DC bias output signal
SL1_ON	Pickup solenoid drive signal
SL2_ON	Manual feed holding plate locking solenoid drive signal
SL4_ON	Web solenoid drive signal
SL5_ON	Delivery flapper solenoid drive signal
SLED_SNS	Exposure LED connection detection signal
SPAC_DA	Separate high-voltage D/A output signal
SPAC_ON	Separation AC high-voltage output signal
SSR2_OFF	SSR2 drive signal
SW_CUT_OK	Switch PCB connection detection signal
TH_MAIN	Main thermistor detection signal
TH_SUB	Sub thermistor detection signal
TH_OK	Thermistor connection detection signal
TMP	Temperature detection signal
TMP_CHG	Environment sensor sensitivity switch signal
TONER	Waste toner case full detection signal
TR_AD	Transfer high-voltage monitor signal
TRUNIT_OK	Transfer high-voltage PCB connection signal
YD0	Exposure LED-Y image data signal 0
YD1	Exposure LED-Y image data signal 1
YD2	Exposure LED-Y image data signal 2
YD3	Exposure LED-Y image data signal 3
YD4	Exposure LED-Y image data signal 4
YD5	Exposure LED-Y image data signal 5
YD6	Exposure LED-Y image data signal 6
YFAI-1	Exposure LED-Y control signal 1
YFAI-2	Exposure LED-Y control signal 2
YFAI-S	Exposure LED-Y control signal S
YFAI-I	Exposure LED-Y control signal I
YSCLK	Y image data input sync clock signal
YSRST	Y image data latch signal
YVGA	Y-LED chip ground signal

2.1.2 Cassette Pedestal

CL24_ON	Pickup clutch drive signal
M18_A	Pickup motor drive signal A
M18_B	Pickup motor drive signal B
M18_I0	Pickup motor current switch signal I0
M18_I1	Pickup motor current switch signal I1
M19_LCK	Pedestal main motor clock detection signal
M19_ON	Pedestal main motor drive signal
M19_SEL	Pedestal main motor drive higher speed signal
S34_SIZE0	Cassette 3 size detection signal 0
S34_SIZE1	Cassette 3 size detection signal 1
S34_SIZE2	Cassette 3 size detection signal 2
S34_SIZE3	Cassette 3 size detection signal 3
S34_SIZE4	Cassette 3 size detection signal 4
S35_SIZE0	Cassette 4 size detection signal 0
S35_SIZE1	Cassette 4 size detection signal 1
S35_SIZE2	Cassette 4 size detection signal 2
S35_SIZE3	Cassette 4 size detection signal 3
S35_SIZE4	Cassette 4 size detection signal 4
S36_DT	Cassette 3 paper detection signal
S37_DT	Cassette 4 paper detection signal
S38_DT	Cassette 3 paper level 1 detection signal
S39_DT	Cassette 3 paper level 0 detection signal
S40_DT	Cassette 4 paper level 1 detection signal
S41_DT	Cassette 4 paper level 0 detection signal
S42_DT	Cassette 3 pickup detection signal
S43_DT	Cassette 4 pickup detection signal
S44_DT	Vertical path paper detection signal
S45_DT	Right door open/closed detection signal
SL6_ON	Pickup solenoid drive signal

2.2 Abbreviations

LSTR	Last rotation
PINTR	Printer initial multiple rotation
PRINT	Print
PSTBY	Printer standby
WMUP	Warm-up


Face-down delivery unit
Delivery door open/close board sensor
Delivery vertical path sensor
Delivery vertical delivery sensor
Delivery feeper roller(roll)
De-curling fan
Registration drive unit
Transfer swing sensor unit
Pickup main motor
Delivery main motor
Pickup unit
Pickup assembly PCB
K/Y drive unit
Cassette size sensor
Manual feed tray unit
Pre-registration sensor unit
Serial driver PCB
Duplex drive unit
Duplex unit feed sensor
Duplex unit exit sensor
Duplex double sided feed clutch
Duplex equal speed feed clutch
Re-pickup motor
Re-pickup sensor
Hopper unit Y
Hopper unit M
Hopper unit C
Hopper unit Bk
Duplex drive PCB
Drum drive AC generation PCB
Vertical path unit
Fixing assembly unit
Power supply PCB
Switch PCB
DC power supply PCB
2-cassette pedestal
Image formation high-voltage PCB
Transfer drive AC generation PCB
Transfer belt drive motor
Transfer high-voltage PCB
Transfer unit
Finisher/Side paper deck
DC controller PCB
LED power supply PCB
Exposure LED Bk
Exposure LED C
Exposure LED M
Exposure LED Y
EEPROM_K
EEPROM_C
EEPROM_M
EEPROM_Y
System controller PCB
Parallel LED Bk
Switch PCB
SW_CU1
SSR1
SSR2
RL3

4 Cassette Pedestal General Circuit Diagram

Printer unit

J2000A J2000 J2000B

A C B

NC NC NC NC NC

MT3 M4

J2011L J2011H J2011D

ET1 ET2

MT2 M4 FG

GND (DUMMY) FNS-TXD3 FNS-RXD3 GND +24V GND

GND +24V NC

J2009A J2009

To finisher/sorter

NC GND REMOTE NC +24V GND +38V

CN2 CN3 CN1

Accessories power supply PCB

MT4 M4 FG

NC CHOCLK GND TXEND2N TXDATA2 RXLOAD2N RXDATA2 TXOUTENB2N

A C B

J2010 J2010B

Side paper deck

J2001 J2001B

A C B

FG GND +24V +5V

RXOUTEN* TXDATA TXLOAD* RXDATA RXEND* GND CLOCK NC

MT5 M4

NC

J650 J651

Pedestal controller PCB

J652 J655 J656 J657

GND S34_SIZE0 S34_SIZE1 S34_SIZE2 S34_SIZE3 S34_SIZE4 GND S35_SIZE0 S35_SIZE1 S35_SIZE2 S35_SIZE3 S35_SIZE4 D34in

+24VU +5VD GND VPAS34_CL VPAS34_SL M18_A M18_B M18_I0 M18_I1 S36_DT S37_DT S44_DT S39_DT S38_DT S41_DT S40_DT S42_DT S43_DT

GND S45_DT +5VD

M19_SEL M19_LCK* M19_ON* +24V +24V GND GND

J2002D J2002H J2002L J1601

J2005D J2005H J2005L J2006 S45

Right door open/closed sensor

J6571 M19

Pedestal main motor

S39 S41 S37

Cassette 3 paper level L sensor

Cassette 4 paper level L sensor

Cassette 4 paper sensor

S38 S40 S44

Cassette 3 paper level H sensor

Cassette 4 paper level H sensor

Vertical path level sensor

Pedestal pickup PCB

J1602 J1603 J1604 J1605 J1607 J1608

M18_A* M18_A M18_B* M18_B

NC NC CL24_ON* +24VU

NC NC SL6_ON* +24VU

+5VD S36_DT GND

GND S42_DT +5VD

GND S43_DT +5VD

J2003D J2003H J2003L J1740-3

Cassette 3 size sensor S34

J2004D J2004H J2004L J1740-4

Cassette 4 size sensor S35

M M18 Pickup motor

CL CL24 Pickup clutch

SL SL6 Pickup solenoid

J1606 Q1604 S36 Cassette 3 paper sensor

J2007 S42 Cassette 3 pickup sensor

J2008 S43 Cassette 4 pickup sensor

(120V/230V)

PLG12(120V) PLG13(230V) PLG14(UK) PLG15(CA)

J2016D

FG MT1 M5

(120V/230V)

OLT13(120V) OLT5(230V) OLT14(120V) OLT16(230V) OLT11 OLT12

MT6 MT7 M5

J2017F J2017M

(100V)

PLG11 (100V)

J2016M J2016F

CB1 CB2 TWDA1

FT1 FT2 FT3 FT4 FT5 FT6 FT7 FT8 FT9 FT10 FT11 FT12

(120V)

PLG17 MT8 M5

CB15 CB16 SW12 FT13 FT14 FT15 FT16 FT17 FT18

J2018F

(230V)

PLG18 MT8 M5

CB17 SW13 FT17 FT18 FT19 FT20

J2019F J2019M

PLG16 (100V)

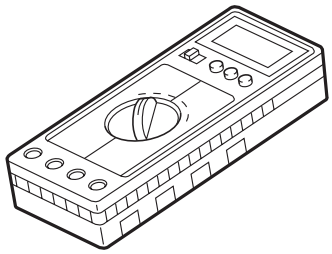
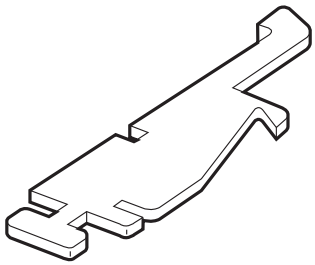
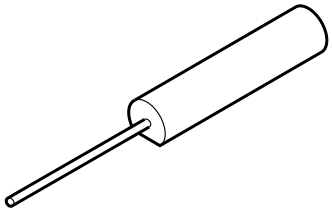
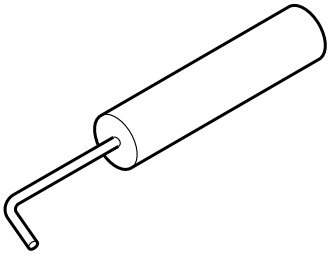
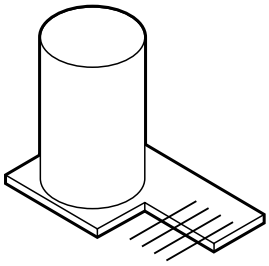
CB13 CB14 SW11 FT13 FT14 FT15 FT16 FT17 FT18

J2018F J2018M

H3 Pedestal heater (100V) (230V) (120V)

5 Special Tools

You will need the following special tools in addition to the standard tools set:

No.	Tool name	Tool No.	Rank	Shape	Uses
1	Digital multimeter	FY9-2002	A		For making electrical checks; e.g., for adjustment of the laser intensity in combination with the laser power checker.
2	Door switch	TKN-0093	A		
3	Meter extension pin	FY9-3038	A		For making electric checks (in combination with the digital multimeter).
4	Meter extension pin (L-tipped)	FY9-3039	A		For making electric checks (in combination with the digital multimeter).
5	Environment sensor checker	TKN-0456	B		For checking the environment sensor.

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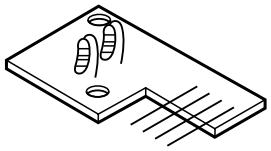
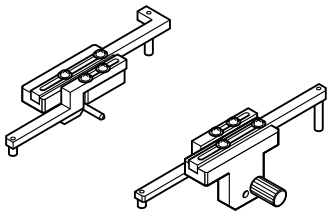
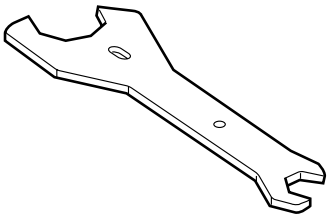
No.	Tool name	Tool No.	Rank	Shape	Uses
6	Environment measurement PCB checker	TKN-0457	B		For checking the environment measurement PCB.
7	Mirror positioning tool (front, rear)	FY9-3040-000	B		For adjusting the position of the No. 1/ No. 2 mirror (distance; used in combination).
8	Adjusting spanner	FY9-1027-000	B		For adjusting the level of the reader unit.

TA-500-02

6 Solvents and Oils

No.	Name	Uses	Composition	Remarks
1	Alcohol	Cleaning: e.g., glass, plastic, rubber; external covers	Fluoride family hydrocarbon, Alcohol, Surface activating agent, Water	• Do not bring near fire. • Procure locally. • Isopropyl alcohol may be substituted.
2	Solvent	Cleaning: e.g., metal; oil stains, toner stains	Fluoride family hydrocarbon, Chlorine family hydrocarbon, Alcohol	• Do not bring near fire. • Procure locally.
3	Heat-resisting grease	Lubricating: e.g., fixing drive mechanism	Mineral family lithium soap, Molybdenum disulfide	• Tool No.: CK-0427 (500 g/can)
4	Lubricating oil		Mineral oil (paraffin family)	• Tool No.: CK-0524 (100 cc)
5	Lubricating oil	Lubricating: e.g., drive mechanism, sliding mechanisms	Silicone oil	• Tool No.: CK-0551
6	Drum cleaning powder	Cleaning: photosensitive drum	Cerium oxide	• Tool No.: CK-0429
7	Lubricating oil	Lubricating: scanner rail	Silicone oil	• Tool No.: FY9-6011 (50 cc)
8	Conducting grease	Lubricating: drum heater contact	Polyether, Polytetrafluoroethylene	• Tool No.: FY9-6008 (10 g)

TA-600-01

Service Mode

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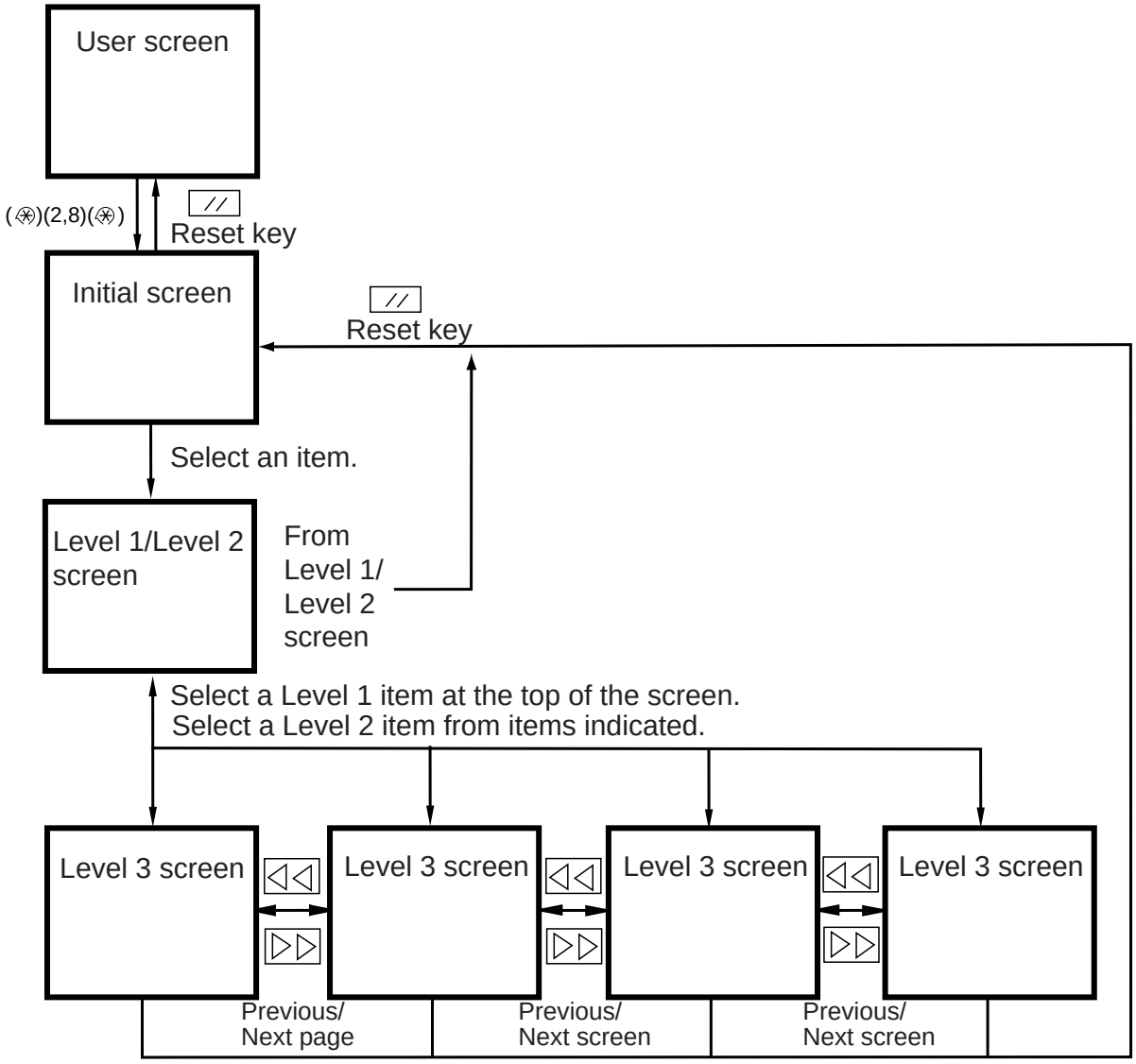
1 Outline

1.1 Construction of Service Mode

The service mode screens have a 3-layer construction: Initial screen, Level 1/Level 2 screen, and Level 3 screen.



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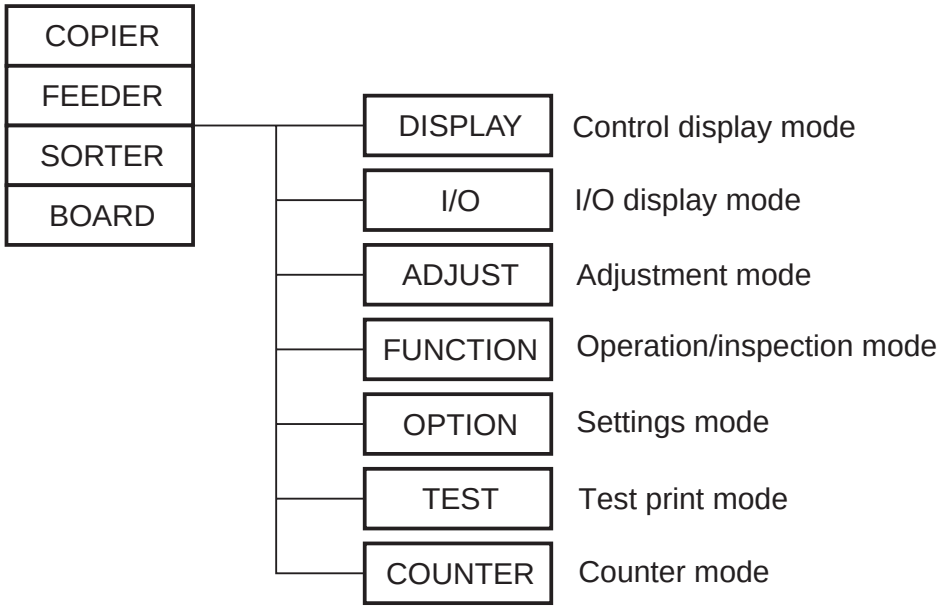
The machine's service mode is classified into the following seven modes:



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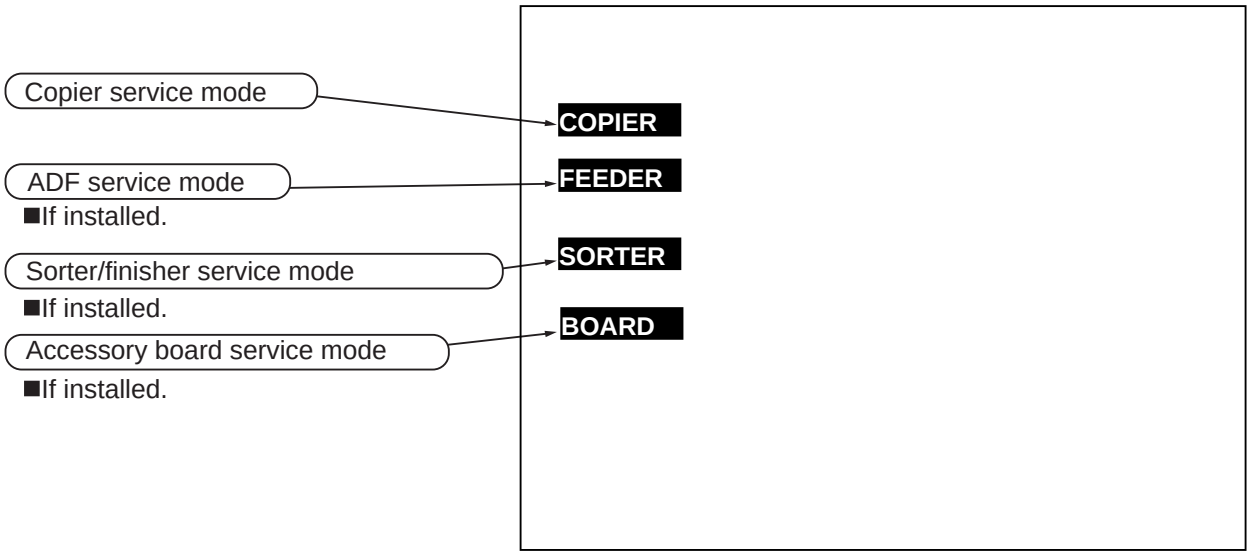
1.2 Starting the Service Mode

If you want to operate the machine using its service mode, be sure to disconnect the cable connected to the external controller before starting service mode.
In particular, if the external controller sends a print job while the copier is executing a function in service mode, the possible malfunction can at times damage the copier.

1) Press the asterisk key * on the control panel.
2) Press '2' and '8' on the keypad at the same time.
3) Press the asterisk key * on the control panel.

The above will bring up the following initial screen:



F00-102-01

1.3 Ending the Service Mode

Press the Reset key once to return to the service mode Initial screen (F00-102-01).

Press the Reset key twice to end the service mode and return to the User (standard) screen.

If you have used any of the following service modes, be sure to turn off and then on the main power switch after ending the mode: ADJUST, FUNCTION, OPTION.

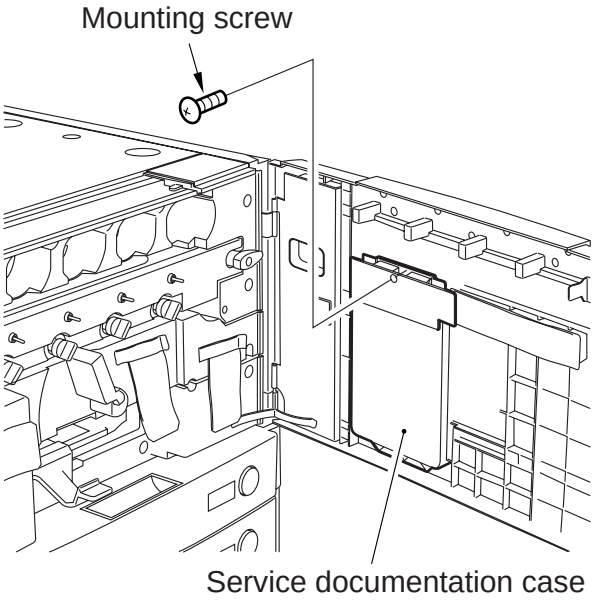
1.4 Backing Up the Service Mode

Before shipment from the factory, each machine is adjusted individually, and the adjustment values are recorded on its service labels:

- reader controller PCB service label (found behind the reader unit front lower cover)
- system controller PCB/DC controller PCB service label (found on the service documentation case behind the printer unit front cover; see the diagram)

If you have replaced the reader controller PCB, system controller PCB, or DC controller PCB, be sure to detach the EEPROM from each PCB and attach it to the new PCB.

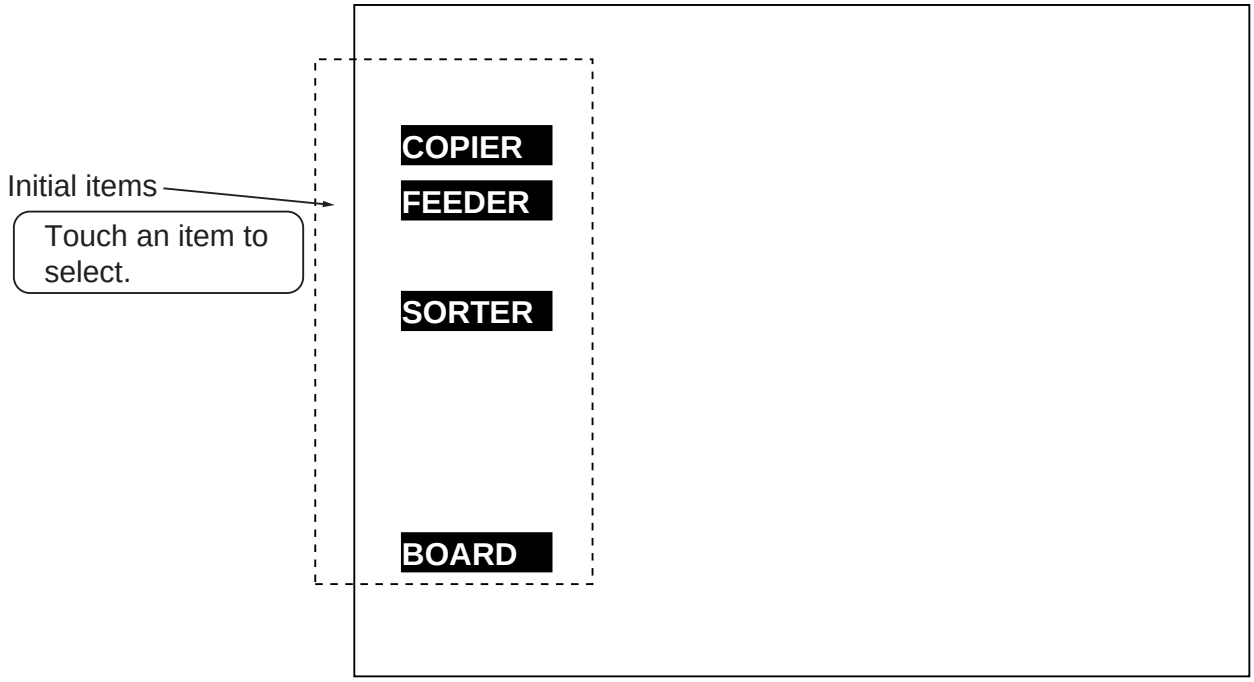
If you have cleared the RAM, on the other hand, the ADJUST and OPTION settings will all return to the factory settings. If you have made adjustments in the field and changed the service mode settings during the work, be sure to record the new settings on the service labels. (If an appropriate column is not found on the label, use its blank space.)



F00-104-01

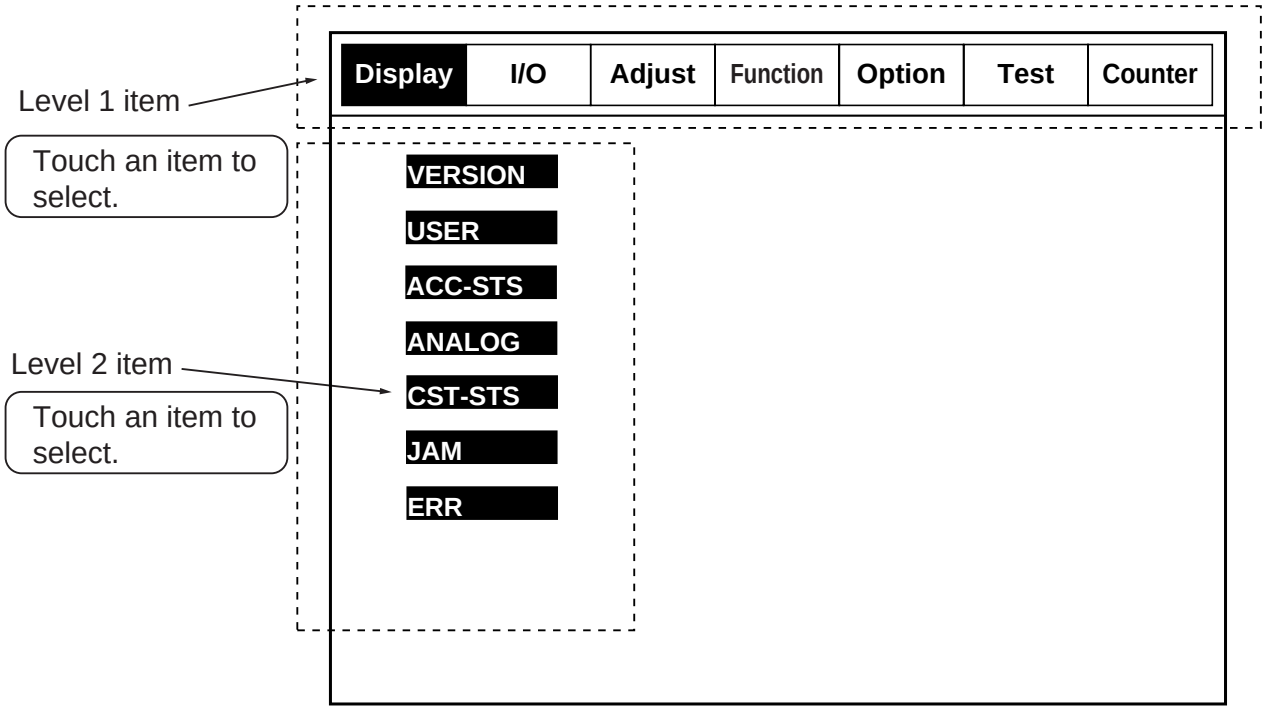
1.5 Basic Operation

1.5.1 Initial Screen



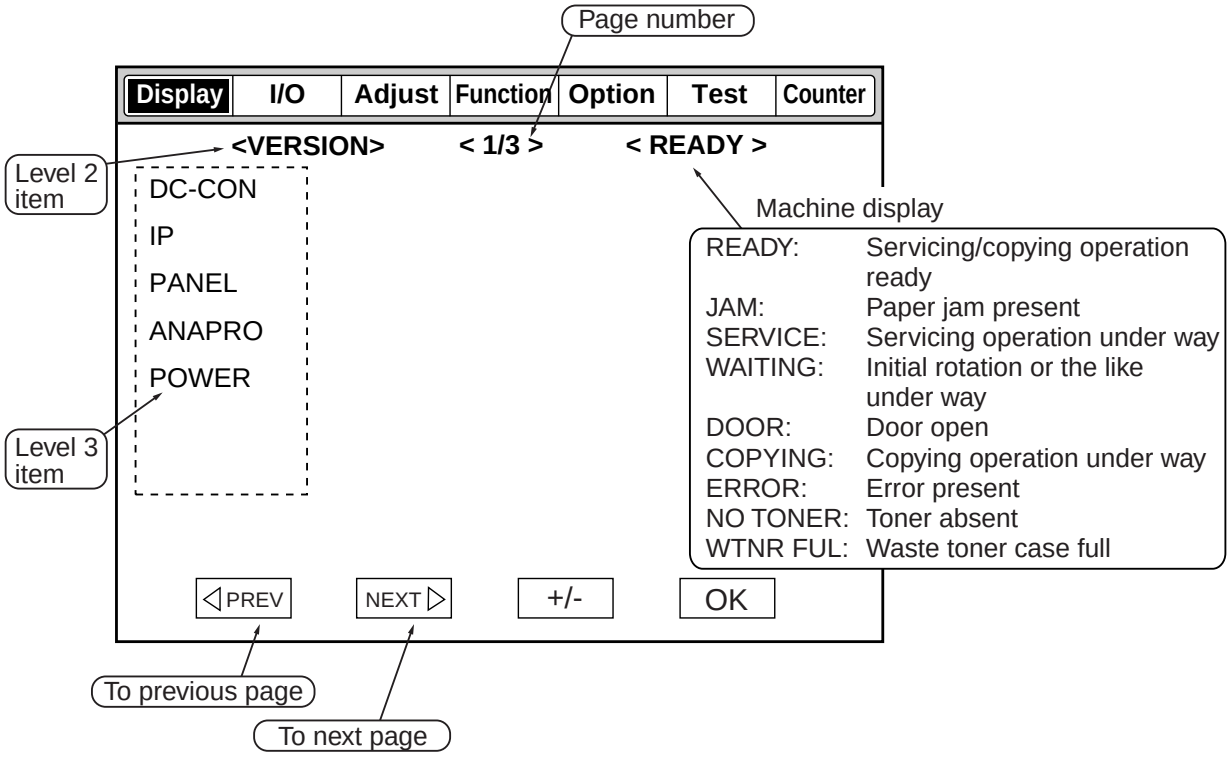
F00-105-01

1.5.2 Level 1/Level 2 screen

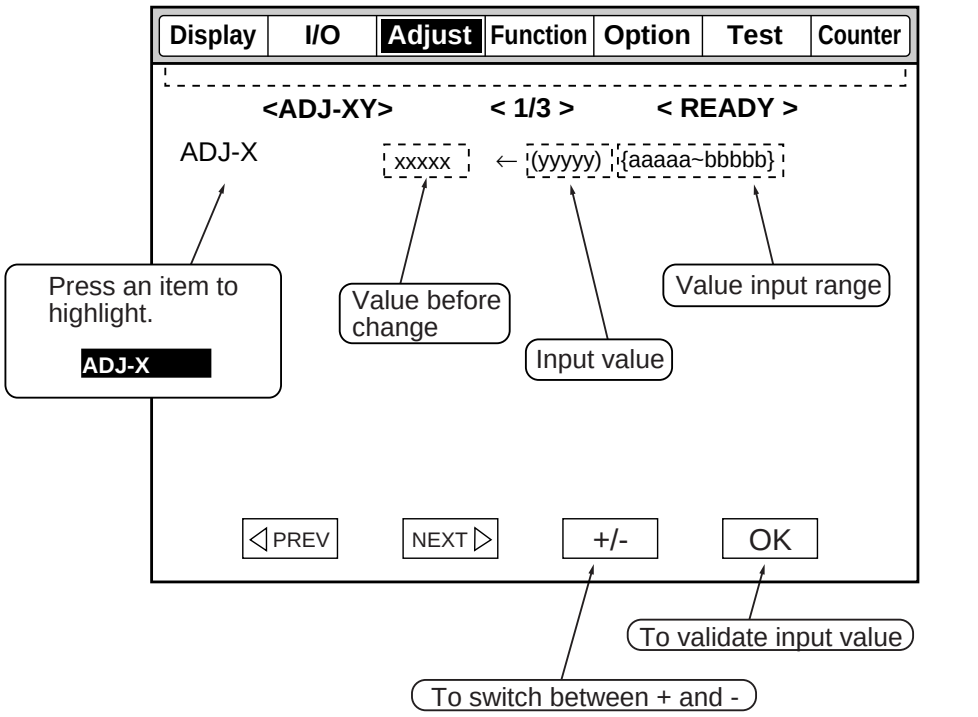


F00-105-02

1.5.3 Level 3 Screen



F00-105-03



Stop key: press to stop the ongoing operation.

Clear key: press to clear a numeric value.

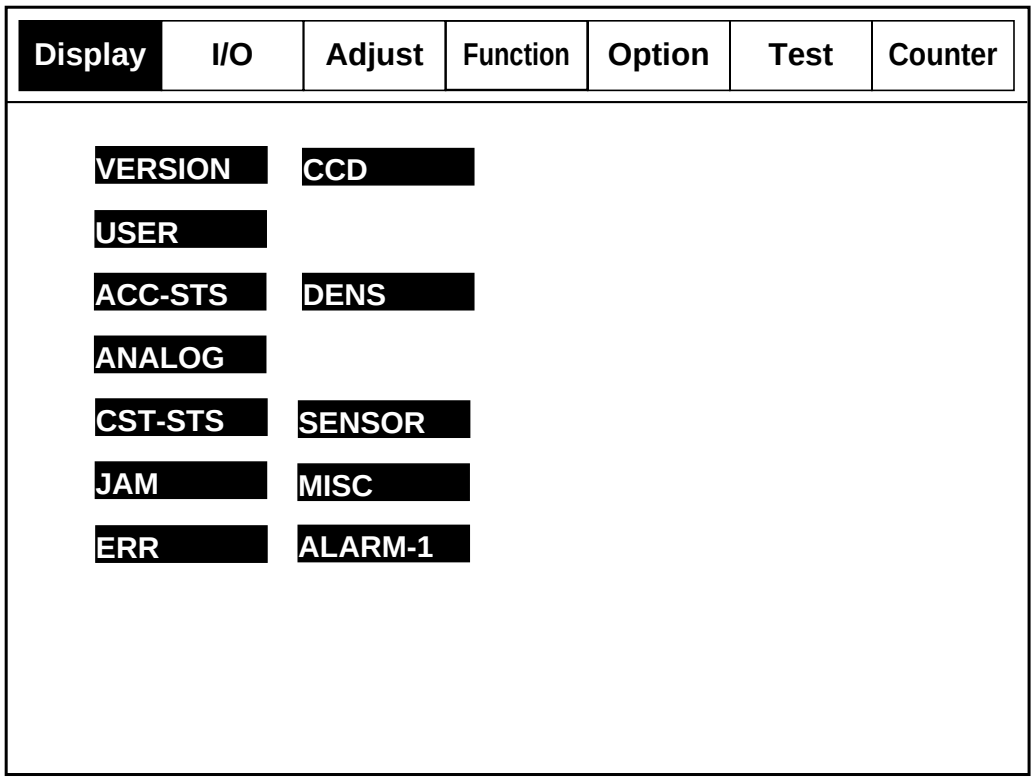
Start key: press to make copies without ending the service mode.

F00-105-04

2 DISPLAY (status indication mode)

2.1 COPIER/PRINTER

The following figure shows the COPIER>DISPLAY screen:



F00-201-01

COPIER>DISPLAY

<VERSION>

Use it to indicate the ROM version of each PCB (machine and accessory).

EX: <R-CON XX.YY>, while XX indicates a version number and YY, an R&D control number.

R-CON	Indicates the ROM version of the reader controller PCB.
S-CON	Indicates the ROM version of the system controller PCB.
DC-CON	Indicates the ROM version of the DC controller PCB.
PANEL	Indicates the ROM version of the control penal controller PCB.
ECO	Indicates the ROM version of the ECO PCB.
FEEDER	Indicates the ROM version of the DADF controller PCB.
SORTER	Indicates the ROM version of the sorter controller PCB/finisher controller PCB.
PS/PCL	Indicates the ROM version of the PDL board.
PS/KANJI	Indicates the ROM version of the PDL board.
PS	Indicates the ROM version of the PDL board.

<USER>

Use it to make settings related to the indications on the screen of the control panel.

LANGUAGE	Language used/destination of shipment EX: <LANGUAGE XXYY.ZZ.aa> XX: country YY: language ZZ: 00=CANON, 01=others aa: 00: AB series, 01=Inch series, 02=A series, 03=all sizes

COPIER>DISPLAY

<ACC-STS>

Use it to indicate the state of connection of accessories.

FEEDER	Indicates the state of connection of the feeder. 0: absent, 1: present
SORTER	Indicates the state of connection of the sorter. 0: absent, 1: present.
DECK	Indicates the state of connection of the paper deck. 0: absent, 1: present
EDITOR	Indicates the state of connection of the editor. 0: absent, 1: present
CARD	Indicates the state of connection of the control card. 0: absent, 1: present (or, shorting connector is connected)
DATA-CON	Indicates the state of connection of the copy data controller. 0: absent, 1: copy data controller present, 2: NE controller present
PCB	Indicates the state of connection of various boards. 1: PDL board, 2: duplex driver PCB (other numerals not used)

<ANALOG>

Use it to indicate the measurement reading of analog sensors.

TEMP	Indicates the machine inside temperature (by environment sensor).
HUM	Indicates the machine inside humidity (by environment sensor).
ABS-HUM	Indicates the moisture content (by environment sensor).
FIX-C	Indicates the temperature of the fixing roller (by main thermistor).

<CST-STS>

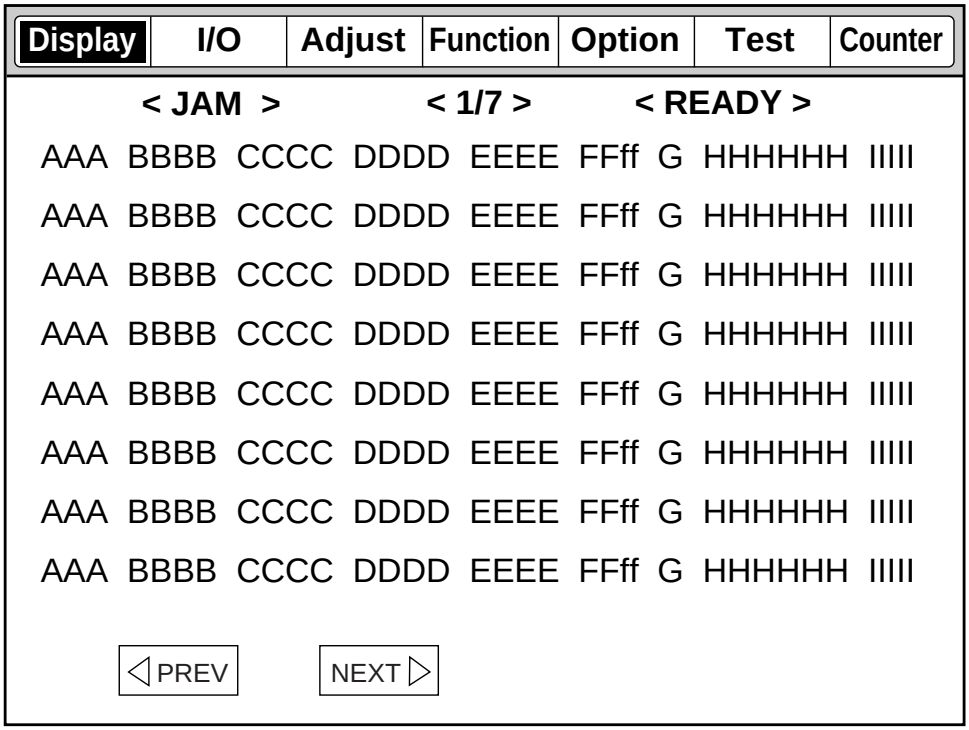
Use it to indicate how the manual feed tray is being used.

WIDTH-MF	Indicates the size and the width (mm) of paper placed on the manual feed tray.

COPIER>DISPLAY

<JAM>

Use it to indicate jam data.


Display
I/O
Adjust
Function
Option
Test
Counter
< JAM >
< 1/7 >
< READY >
AAA BBBB CCCC DDDD EEEE FFff G HHHHHH IIIII
AAA BBBB CCCC DDDD EEEE FFff G HHHHHH IIIII
AAA BBBB CCCC DDDD EEEE FFff G HHHHHH IIIII
AAA BBBB CCCC DDDD EEEE FFff G HHHHHH IIIII
AAA BBBB CCCC DDDD EEEE FFff G HHHHHH IIIII
AAA BBBB CCCC DDDD EEEE FFff G HHHHHH IIIII
AAA BBBB CCCC DDDD EEEE FFff G HHHHHH IIIII
AAA BBBB CCCC DDDD EEEE FFff G HHHHHH IIIII
◁ PREV
NEXT ▷

F00-201-02

AAA	Indicates the numbers of jams. 1 to 50 (The higher the number, the older the jam.)
BBBB, CCCC, DDDD	Not used.
E	Indicates the location of the jam. 0: machine, 1: feeder, 2: sorter
FFff	Indicates jam codes. FF: jam type (T00-201-01), ff: jam sensor (T00-201-02)

G	Indicates the source of paper. (T00-201-06)
HHHHHH	Indicates the holder for COUNTER>PICKUP.
IIIII	Indicates the size of paper.

COPIER>DISPLAY
FF: type of jam

Code	Type
01ff	Delay jam
02ff	Stationary jam
03ff	Timing jam
10ff	Residual jam at power-on
11ff	Front cover open jam
00ff	Jam in accessory

T00-201-01

ff: jam sensor

Code	Sensor
FF01	Pre-registration sensor (S12)
FF02	Vertical path sensor (S11)
FF03	Cassette 1 pickup senor (S9)
FF04	Cassette 2 pickup sensor (S10)
FF05	Vertical path paper sensor (S44)
FF06	Cassette 3 pickup sensor (S42)
FF07	Cassette 4 pickup sensor (S43)
FF08	Deck feed sensor (PS106)
FF09	Deck pickup sensor (PS101)
FF20	Transparency sensor (S13/S14)
FF31	Post-registration sensor (S52)
FF32	Fixing assembly inlet sensor (S25)
FF33	Internal delivery sensor (S27)
FF34	External delivery sensor (S28)
FF61	Delivery vertical path sensor (S29)
FF62	Duplex unit inlet sensor (S30)
FF63	Duplex unit lower sensor (S33)
FF64	Re-pickup sensor (S31)

T00-201-02

“0231” (jam by wrong paper size setting)
The paper moved to the transfer belt is shorter in feeding length than the one selected.

Sorter/Finisher/DADF Jam Code

ff: jam sensor (sorter-related)

Code	Sensor
0003	Delivery sensor (PS1)/non-sort path sensor (PI11): feed delay jam
0004	Delivery sensor (PS1)/non-sort path sensor (PI11): feed stationary jam
0006	Stapler jam
0007	Power-on jam
0008	Door open jam

T00-201-03

ff: jam sensor (finisher-related)

Code	Sensor
0005	Timing jam
0006	Stapler jam
0007	Power-on jam
0008	Door open jam
0011	Inlet sensor (PI1): feed delay jam
0012	Buffer path inlet paper sensor (PI17): feed delay jam
0013	Buffer path inlet paper sensor (PI14): feed delay jam
0014	Delivery sensor (PI3): feed delay jam
0021	Inlet sensor (PI1): feed stationary jam
0022	Buffer path inlet paper sensor (PI17): feed stationary jam
0023	Buffer path paper sensor (PI14): feed stationary jam
0024	Delivery sensor (PI3): feed stationary jam
0025	Stapler tray sensor (PI4): feed stationary jam

T00-201-04

COPIER>DISPLAY
ff: jam sensor (DADF-related)

Code	Sensor
0001	Original tray sensor (S1)/pickup sensor (S7) original extraction
0002	Pickup sensor (S7): pickup delay jam
0003	Registration paper sensor (S3)/pickup sensor (S7): registration delay jam
0005	Pickup sensor (S7): pickup stationary jam
0011	Reversal sensor (S8): reversal sensor delay jam
0012	Reversal sensor (S8): reversal sensor stationary jam
0041	Delivery sensor (S6): delivery sensor delay jam
0042	Delivery sensor (S6): delivery sensor stationary jam
0081	DF open jam (DF in operation)
0082	Upper cover sensor (S4): upper cover open jam (DF in operation)
0083	Original tray paper sensor (S1): when two or more originals are used, the original tray paper sensor (S1) is off for 2 sec or more after the pickup motor has turned on.
0084	All sensors: power-on jam
0088	Reversal sensor (S8): residual paper detection
0091	DF open jam (during image scanning)
0092	Upper over sensor (S4): upper cover open jam (during image scanning)
0093	Recirculation sensor (S14): the recirculating lever made an idle swing in spite of the presence of an original on the original tray.

T00-201-05

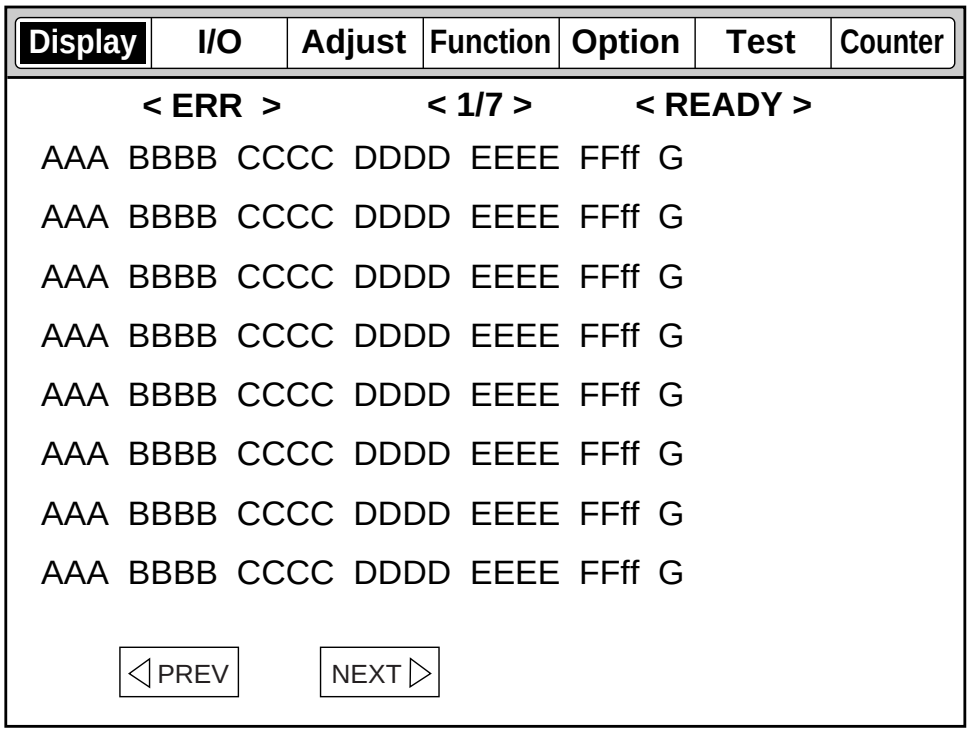
G: source of paper

Code	Description
1	Cassette 1
2	Cassette 2
3	Cassette 3
4	Cassette 4
5	Side paper deck
6	Manual feed tray
7	Duplex unit

T00-201-06

<ERR>

Use it to indicate error data.



F00-201-03

AAA	Indicates the numbers of errors. 1 to 50 (The larger the number, the older the error.)
BBBB, CCCC, DDDD	Not used.
EEEE	Indicates error codes. See the descriptions in “Error Codes.”
FFff	Indicates detail codes. If none, “0000”.

COPIER>DISPLAY

G	Indicates the location. 0: machine, 1: feeder, 2: finisher

<CCD>

Use it to indicate measurements related to the CCD.

TARGET-B	Indicates the shading target value of BLUE. If normal, “237.”
TARGET-G	Indicates the shading target value of GREEN. If normal, “237.”
TARGET-R	Indicates the shading target value of RED. If normal, “237.”
BOF-B	Indicates the output of the BLUE CCD when the scanning lamp remains off. Display <BOF-B xx/yy> xx: odd-number bit measurement (if normal, “6” to “9”) yy: even-number bit measurement (if normal, “6” to “9”)
BOF-G	Indicates the output value of the RED CCD when the scanning lamp remains off. Display <BOF-G xx/yy> xx: odd-number bit measurement (if normal, “6” to “9”) yy: even-number bit measurement (if normal, “6” to “9”)
BOF-R	Indicates the output value of the RED CCD when the scanning lamp remains off. Display <BOF-R xx/yy> xx: odd-number bit measurement (if normal, “6” to “9”) yy: even-number bit measurement (if normal, “6” to “9”)
OFST-OB	Indicates the offset level adjustment value of BLUE for the odd-number bits of the CCD. If normal, “1” to “254.” If “0” or “255” is indicated, a fault may be suspected in the CCD unit.

COPIER>DISPLAY

OFST-OG	Indicates the offset level adjustment value of GREEN for the even-number bits of the CCD. If normal, “1” to “254.” If “0” or “255” is indicated, a fault may be suspected in the CCD unit.
OFST-OR	Indicates the offset level adjustment value of RED for the odd-number bit of the CCD. If normal, “1” to “254.” If “0” or “255” is indicated, a fault may be suspected in the CCD unit.
OFST-EB	Indicates the offset level adjustment value of BLUE for the even-number bits of the CCD. If normal, “1” to “254.” If “0” or “255” is indicated, a fault may be suspected in the CCD unit.
OFST-EG	Indicates the offset level adjustment value of GREEN for the even-number bits of the CCD. If normal, “1” to “254.” If “0” or “255” is indicated, a fault may be suspected in the CCD unit.
OFST-ER	Indicates the offset level adjustment value of RED for the even-number bits of the CCD. If normal, “1” to “254.” If “0” or “255” is indicated, a fault may be suspected in the CCD unit.
GAIN-OB	Indicates the gain level adjustment value of BLUE for the odd-number bits of the CCD. If “0” or “255” is indicated, a fault in the lamp or the lamp intensity adjustment may be suspected.

GAIN-OG	Indicates the gain level adjustment value of GREEN for the odd-number bits of the CCD. If “0” or “255” is indicated, a fault in the lamp or the lamp intensity adjustment may be suspected.
GAIN-OR	Indicates the gain level adjustment value of RED for the odd-number bits of the CCD. If “0” or “255” is indicated, a fault in the lamp or the lamp intensity adjustment may be suspected.
GAIN-EB	Indicates the gain level adjustment value of BLUE for the even-number bits of the CCD. If “0” or “255” is indicated, a fault in the lamp or the lamp intensity adjustment may be suspected.
GAIN-EG	Indicates the gain level adjustment value of GREEN for the even-number bits of the CCD. If “0” or “255” is indicated, a fault in the lamp or the lamp intensity adjustment may be suspected.
GAIN-ER	Indicates the gain level adjustment value of RED for the even-number bits of the CCD. If “0” or “255” is indicated, a fault in the lamp or the lamp intensity adjustment may be suspected.

COPIER>DISPLAY

<DENS>

Use it to indicate the concentration of the developer inside the developing machine.

DENS-Y/M/C/K

Indicates the measurement of the developer concentration.
Indicates the difference from the target value in %.
Optimum: -1.5% to 1.5%

DMAX-Y/M/C/K

Indicates the measurement of the density of solid areas.
Indicates the average of test pattern densities showing the degree of difference from the target value of the solid density read at time of auto gradation correction in user mode.
Optimum: DMAX-Y: 188 to 245
DMAX-M: 207 to 265
DMAX-C: 227 to 283
DMAX-K: 226 to 284

VRATE-Y/M/C/K

Indicates the correction value of the contrast potential.
Indicates the degree of correction to be made to the contrast potential (in %) as a result of executing auto gradation correction.
Optimum: 70% to 130%

INIT-SIG-Y/M/C/K

Indicates the density signal level of initial developer.
Indicates the initial developer concentration signal level at last printing (concentration signal level is corrected to suit the environment and wear).
Optimum: 104 to 188

<SENSOR>

Use it to indicate the state of sensors.

SC-HP	Indicates the output of the scanner HP sensor. 1: Scanner at HP, 0: Scanner not at HP
WEB	Indicates the output of the web length sensor. 0: Web length alarm not detected, 1: Web length alarm detected
DOC-SZ	Indicates the size of the original detected by the original side sensor.

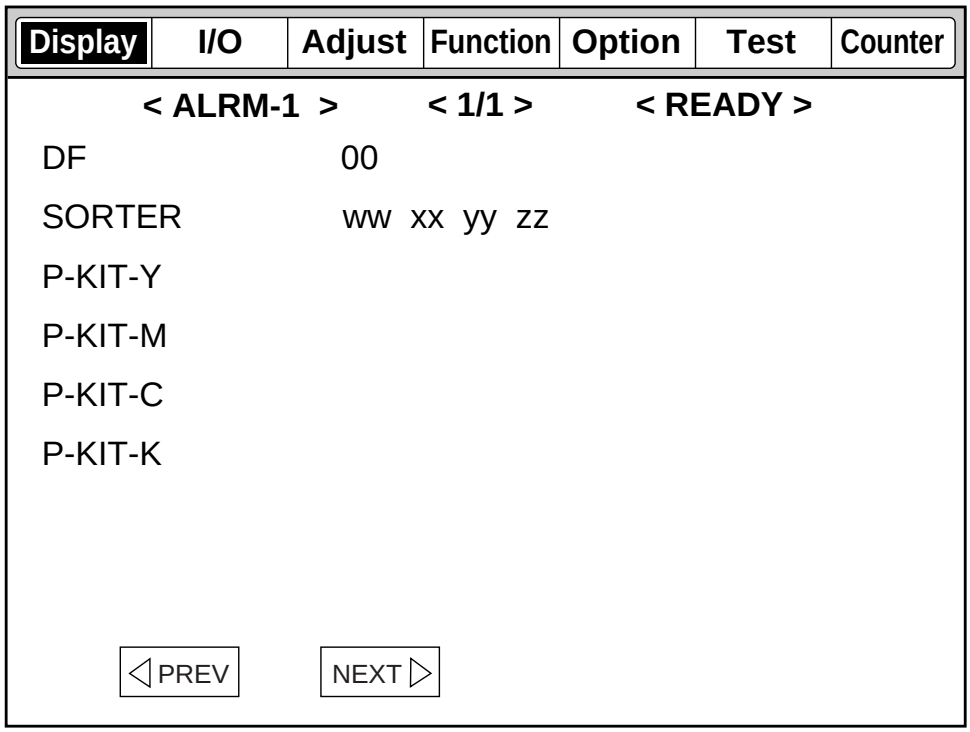
<MISC>

Use it to indicate other information.

ENV-TR	Indicates the type of environment. Checks the environment (temperature/humidity) inside the printer unit, and indicates the type of environment for transfer control. 0: Low humidity environment, 1: Normal humidity environment, 2: High humidity environment

COPIER>DISPLAY
<ALARM1>

Use it to indicate alarm data.



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DF	Indicates an ADF alarm. For details of codes, see the ADF Service Manual.
SORTER	Indicates a sorter/finisher alarm. For details of codes, see the Sorter/Finisher Service Manual. w: Finisher stapler alarm xx: Saddle stitcher stapler alarm yy: Stack alarm zz: Tray alarm
P-KIT-Y/M/C/K	Drum Unit Wear Index When a new drum unit is installed, the indication will be '0%'. Thereafter, the percentage indication will increase as wear advances.

IMG-DT-Y/M/C/K	
	Image Ratio of Copy/Print Job (average of past jobs)
Use	This data is used when setting the timing at which the following message is indicated: “Prepare for the Replacement of the Drum Unit” and “Replace the Drum Unit.”
Reference	If the image ratio for copy/print jobs is low, the drum unit will last so much longer; in this respect, the timing of indication may be delayed for users making copies/prints with a low image ratio.
CRY-AVE	
	Copy/print Job Count (average of past jobs)
Use	This data is used when setting the timing at which the following message is indicated: “Prepare for the Replacement of the Drum Unit” and “Replace the Drum Unit.”
Reference	If the copy/print count is high, the drum unit will last so much longer; in this respect, the timing of indication may be delayed for users using a high copy/print count.

FEEDER/EDITION>DISPLAY

2.2 FEEDER

Use it to indicate items under FEEDER>DISPLAY.

FEEDSIZE	Indicates the side of the original detected.

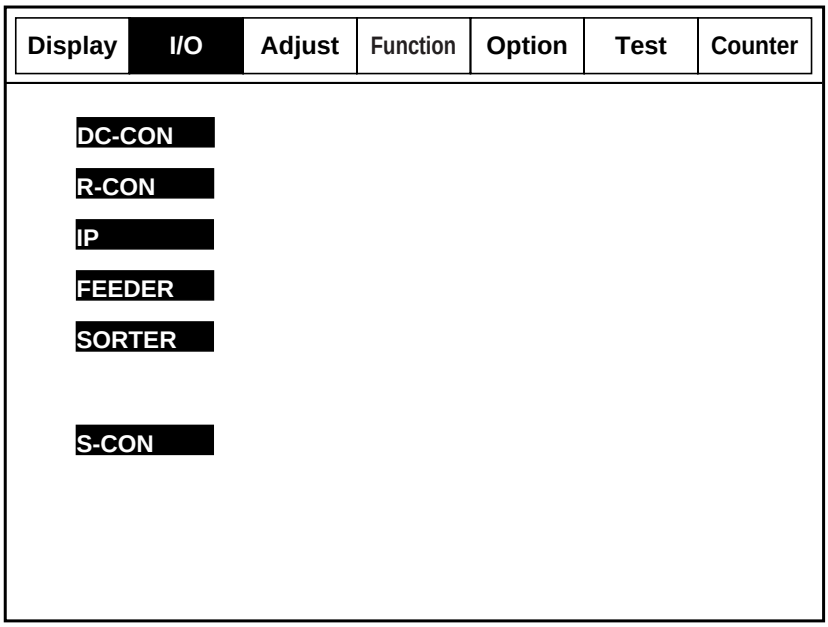
2.3 EDITOR

Use it to indicate the items under EDITOR>DISPLAY.

ED-X	Indicates the input coordinates in editor sub scanning direction (X) or mm conversion value. (unit: 0.13 mm, approx.)
ED-Y	Indicates the input coordinates in editor main scanning direction (Y) or mm conversion values. (unit: 0.13 mm approx.)

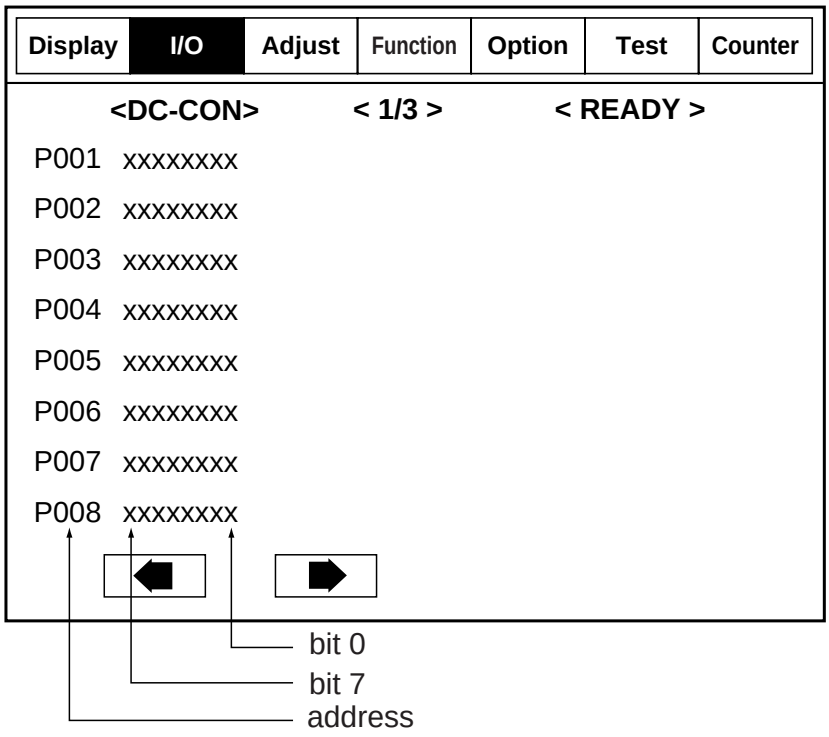
3 I/O (I/O display mode)

The following is the COPIER>I/O screen; for the items (only those needed in the field) are shown on the next page:



F00-300-01

<Guide to the Screen>



F00-300-02

COPIER>I/O

3.1 DC-CON

• DC Controller PCB (1/6)

Address	Bit	Notation	Description	Remarks
P001	7	-	-	
	6	FM4	Machine cooling fan lock detection signal	1: Locked (stop)
	5	S15	Manual feed paper detection signal	0: Paper present
	4	S11	Vertical path detection signal	0: Paper present
	3	S12	Pre-registration paper detection signal	1: Paper present
	2	S50	Transfer swing detection signal 2	1: ON (light-blocking plate present)
	1	S49	Transfer swing detection signal 1	1: ON (light-blocking plate present)
	0	S55	Vertical path door open/closed detection signal	0: Open
P002	7	S9	Cassette 1 pickup detection signal	1: Paper present
	6	S5	Cassette 1 paper level H detection signal	1: ON (light-blocking plate present)
	5	S6	Cassette 1 paper level L detection signal	1: ON (light-blocking plate present)
	4	S3	Cassette 1 paper detection signal	0: Paper present
	3	S10	Cassette 2 pickup detection signal	1: Paper present
	2	S7	Cassette 2 paper level detection signal	1: ON (light-blocking plate present)
	1	S8	Cassette 2 paper level L detection signal	1: ON (light-blocking plate present)
	0	S4	Cassette 2 paper detection signal	0: Paper present
P003	7	FM2	Delivery fan locked detection signal	1: Locked (stop)
	6	FM10	Kit drive cooling fan locked detection signal	1: Locked (stop)
	5	M2	Pickup main motor locked detection signal	1: Locked (stop)
	4	-	-	
	3	S52	Post-registration paper detection signal	1: Paper present
	2	WTS2	Waste toner full detection signal	1: Waste toner case full or absent
	1	FM1	Fixing fan locked detection signal	1: Locked (stop)
	0	M20	Waste toner motor over-current detection signal	0: Overcurrent detected
P004	7	M16	Delivery main motor lock detection signal	1: Locked (stop)
	6	SW3	Front door open/closed detection signal	1: Open
	5	-	-	
	4	S2	Cassette 2 size detection signal 4	0: ON
	3	S2	Cassette 2 size detection signal 3	0: ON
	2	S2	Cassette 2 size detection signal 2	0: ON
	1	S2	Cassette 2 size detection signal 1	0: ON
	0	S2	Cassette 2 size detection signal 0	0: ON

T00-301-01 (1/6)

• DC Controller PCB (2/6)

Address	Bit	Notation	Description	Remarks
P005	7	-	-	
	6	-	-	
	5	FM7	De-curling fan lock detection signal	1: Locked (stop)
	4	S1	Cassette 1 size detection signal 4	0: ON
	3	S1	Cassette 1 size detection signal 3	0: ON
	2	S1	Cassette 1 size detection signal 2	0: ON
	1	S1	Cassette 1 size detection signal 1	0: ON
	0	S1	Cassette 1 size detection signal 0	0: ON
P006	7	M14	Cartridge motor Bk current detection	0: Error
	6	M13	Cartridge motor C current detection	0: Error
	5	M12	Cartridge motor M current detection	0: Error
	4	M11	Cartridge motor Y current detection	0: Error
	3	S23	Toner level Bk detection signal	1: Toner present
	2	S22	Toner level C detection signal	1: Toner present
	1	S21	Toner level M detection signal	1: Toner present
	0	S20	Toner level Y detection signal	1: Toner present
P007	7	-	-	
	6	S24	Web length detection signal	0: Web short
	5	S26	Fixing assembly inlet arch detection signal	1: Paper present
	4	S56	Face-down delivery unit release detection signal	1: Not installed
	3	S29	Delivery vertical path detection signal	1: Paper present
	2	S28	External delivery detection signal	1: Paper present
	1	S27	Internal delivery detection signal	1: Paper present
	0	S25	Fixing assembly inlet detection signal	1: Paper present
P008	7	-	-	
	6	-	-	
	5	-	-	
	4	-	-	
	3	-	-	
	2	S33	Reversal detection signal	1: Paper present
	1	S30	Duplexing unit inlet detection signal	0: Paper present
	0	S31	Re-pickup detection signal	1: Paper present

T00-301-01 (2/6)

COPIER>I/O

• DC Controller PCB (3/6)

Address	Bit	Notation	Description	Remarks
P009	7	-	PDL connection detection	0: Connected
	6	S14	Transparency sensor rear detection signal	0: Paper present (plain paper)
	5	S13	Transparency sensor front detection signal	0: Paper present (plain paper)
	4	-	Transfer unit connection detection	0: Connected
	3	-	Duplex driver PCB connection signal	0: Connected
	2	SSR1	SSR1 error detection	1: Error
	1	TH2	Fixing sub thermistor high-temperature error detection signal	1: Error
	0	TH1	Fixing main thermistor high-temperature error detection signal	1: Error
P010	7	-	Switch PCB (230-V model) connection detection	1: Connected
	6	RL2	DC relay OFF detection	0: OFF
	5	RL1	AC relay off detection	0: OFF
	4	SW6	Face-down delivery unit connection detection	1: Connected
	3	-	Cartridge Bk detection	1: Use
	2	-	Cartridge C detection	1: Use
	1	-	Cartridge M detection	1: Use
	0	-	Cartridge Y detection	1: Use
P011	7	M20	Waste toner motor open circuit detection signal	1: Open circuit
	6	-	Fixing unit connection detection	1: Connected
	5	-	-	
	4	-	-	
	3	-	-	
	2	-	-	
	1	-	-	
	0	-	-	
P012	7	-	Shut-off detection	1: Error
	6	-	-	
	5	FM6	Power supply cooing fan lock detection signal	1: Locked (stop)
	4	-	-	
	3	-	-	
	2	-	-	
	1	-	-	
	0	-	-	

T00-301-01 (3/6)

• DC Controller PCB (4/6)

Address	Bit	Notation	Description	Remarks
P013	7	-	-	
	6	-	-	
	5	-	-	
	4	-	-	
	3	-	-	
	2	-	-	
	1	-	-	
	0	-	System controller PCB state detection	
P014	7	S51	Transfer belt HP detection signal	0: Light-blocking plate present
	6	-	-	
	5	-	-	
	4	-	-	
	3	-	-	
	2	-	-	
	1	-	Serial communication flow (reception)	0: Reception
	0	-	-	
P015	7	-	-	
	6	-	-	
	5	-	-	
	4	-	-	
	3	-	-	
	2	-	-	
	1	-	FROM_BUSY signal	0: Reset
	0	-	DF original replacement monitor	
P016	7	-	-	
	6	-	-	
	5	-	-	
	4	-	-	
	3	-	-	
	2	-	-	
	1	-	Serial communication flow (transmission)	
	0	-	-	

T00-301-01 (4/6)

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• DC Controller PCB (5/6)

Address	Bit	Notation	Description	Remarks
P017	7	S35	Cassette 4 size detection signal 2	0: ON
	6	S35	Cassette 4 size detection signal 1	0: ON
	5	S35	Cassette 4 size detection signal 0	0: ON
	4	S34	Cassette 3 size detection signal 4	0: ON
	3	S34	Cassette 3 size detection signal 3	0: ON
	2	S34	Cassette 3 size detection signal 2	0: ON
	1	S34	Cassette 3 size detection signal 1	0: ON
	0	S34	Cassette 3 size detection signal 0	0: ON
P018	7	M19	Pedestal main motor clock detection signal	1: Locked (stop)
	6	S45	Right door open/closed detection signal	0: Open
	5	S44	Vertical path paper detection signal	1: Paper present
	4	-	-	
	3	-	Cassette pedestal connection detection	1: Connected
	2	-	-	
	1	S35	Cassette 4 size detection signal 4	0: ON
	0	S35	Cassette 4 size detection signal 3	0: ON
P019	7	S40	Cassette 4 paper level H detection signal	1: ON (light-blocking plate preset)
	6	S41	Cassette 4 paper level L detection signal	1: ON (light-blocking plate preset)
	5	S38	Cassette 3 paper level H detection signal	1: ON (light-blocking plate preset)
	4	S39	Cassette 3 paper level L detection signal	1: ON (light-blocking plate preset)
	3	-	-	
	2	-	-	
	1	S37	Cassette 4 paper detection signal	0: Paper present
	0	S36	Cassette 3 paper detection signal	0: Paper present
P020	7	S43	Cassette 4 pickup detection signal	1: Paper present
	6	S42	Cassette 3 pickup detection signal	1: Paper present
	5	-	-	
	4	-	-	
	3	-	-	
	2	-	-	
	1	-	-	
	0	-	-	

T00-301-01 (5/6)

• DC Controller PCB (6/6)

Address	Bit	Notation	Description	Remarks
P021	7	PS107	Deck paper supply position detection signal	1: Paper present
	6	M101	Deck main motor PLL lock detection signal	1: Locked (stop)
	5	SL101	Deck pickup roller releasing solenoid drive signal	0: ON
	4	PS106	Deck feed detection signal	1: Paper present
	3	PS101	Deck pickup detection signal	1: Paper present
	2	PS104	Deck lifter position detection signal	1: Pickup position
	1	PS102	Deck paper absent detection signal	1: Paper present
	0	SW100	Compartment open signal	0: ON
P022	7	-	-	
	6	-	-	
	5	-	-	
	4	-	Deck set detection signal 2	1: Set
	3	PS109	Compartment open detection signal	0: Open
	2	PS105	Deck set detection signal	1: Set
	1	SW102	Deck lifter lower limit detection signal	1: Lower limit
	0	PS108	Deck paper level detection signal	1: Paper prevent
P023 to P024		-	-	
P025	7	-	-	
	6	-	-	
	5	-	-	
	4	-	-	
	3	-	-	
	2	-	-	
	1	-	-	
	0	S32	Side registration detection signal	1: HP

T00-301-01 (6/6)

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3.2 R-CON

• Reader Controller PCB (1/2)

Address	Bit	Notation	Description	Remarks
P001	-	-	-	
P002	7	PS6	Original size 3 signal	1: Original detected
	6	PS5	Original size 2 signal	1: Original detected
	5	PS4	Original size 1 signal	1: Original detected
	4	PS3	Original size 0 signal	1: Original detected
	3	-	-	
	2	-	-	
	1	-	-	
	0	-	-	
P003	-	-	-	
P004	7	LA1	Original scanning lamp error signal	1: Error
	6	-	-	
	5	-	-	
	4	-	-	
	3	-	-	
	2	-	-	
	1	FM1	Power supply fan rotation detection signal	0: Rotating
	0	PS2	Copyboard cover open/closed signal	0: Open
P005	7	-	-	
	6	-	-	
	5	-	-	
	4	-	-	
	3	-	-	
	2	KSW1	Control key switch signal	0: ON
	1	-	-	
	0	-	-	

T00-302-01 (1/2)

• Reader Controller PCB (2/2)

Address	Bit	Notation	Description	Remarks
P006	7	-	Accessories power supply signal	0: Supplied
	6	LA1	Pre-heating ON signal	0: ON
	5	LA1	Original scanning lamp ON signal	0: ON
	4	-	-	
	3	-	-	
	2	-	-	
	1	-	LCD control panel reset signal	1: Reset
	0	-	-	
P007	-	-	-	
P008	7	-	-	
	6	-	-	
	5	-	-	
	4	H1	Original scanning lamp heater ON signal	0: ON
	3	-	-	
	2	-	-	
	1	FM1	Power supply cooling fan drive signal	1: Rotating
	0	-	LCD control panel back-light ON signal	0: ON
P009 to P012		-	-	
P013	0	TH1	Original scanning lamp thermistor signal	
P014 to P016		-	-	

T00-302-01 (2/2)

3.3 IP

• AP-IP PCB (1/1)

Address	Bit	Notation	Description	Remarks
P001 to P020	-	-		

T00-303-01

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3.4 S-CON

• System Controller PCB (1/2)

Address	Bit	Notation	Description	Remarks
P001	7	-	-	
	6	-	CC-IV count	1: Count
	5	-	FCT mode	
	4	-	Reader power remote	0: ON
	3	-	Reset signal to PDL	0: Reset
	2	-	Back-light ON signal for VGA	0: ON
	1	-	Pre-interrupt	
	0	-	ASSIST connected	1: Connected
P002	7	-	CPU check LED	1: ON
	6	-	DC-CAN serial communication flow	
	5	-	PDL connection detection	0: Connected
	4	-		0: Connected
	3	-	S-CON power ready (for R-CON)	
	2	-	SCON communication ready (for R-CON)	
	1	-	S-CON communication ready (for DC-CON)	
	0	-	Registration ON request (pre-interrupt to DC-CON)	
P003	7	-	-	
	6	-	-	
	5	-	Communication for PC (ACK_98)	
	4	-	Communication for PC (REQ_98)	
	3	-	Serial communication for PC (reception)	
	2	-	-	
	1	-	Serial communication for PC (reception)	
	0	-	-	
P004	7	-	CC-IV connection detection	
	6	-		
	5	-	EEPROM BUSY signal	
	4	-	ADF monitor output from reader unit	
	3	-	DC-CON serial communication flow	
	2	-	R-CON power ready	
	1	-	S-CON communication ready	
	0	-	DC-CON communication ready	

T00-304-01 (1/2)

• System Controller PCB (2/2)

Address	Bit	Notation	Description	Remarks
P005	7	-	-	
	6	-	-	
	5	-	-	
	4	-	-	
	3	-	VGA LED ON/OFF signal	
	2	-	Reset signal for 1/4 VGA	
	1	-	Serial communication (reception) for VGA	
	0	-	Serial communication for VGA (transmission)	
P006	7	-	-	
	6	-	PDL interrupt	
	5	-	DPRAM interrupt (R-CON)	
	4	-	Registration ON check and interrupt by bi-Centronics	
	3	-	Bi-Centronics communication	
	2	-	Bi-Centronics communication	
	1	-	FROM_BUSY signal	
	0	-	-	
P007	7	-	200Hz clock output	
	6	-	S-CON address strobe	
	5	-	S-CON read	
	4	-	S-CON high light	
	3	-	S-CON low light	
	2	-	S-CON wait	
	1	-	PDL slave power ready	
	0	-	PDL master power ready	
P008	7	-	-	
	6	-	-	
	5	-	-	
	4	-	Flash memory for S-CON SC signal	
	3	-	Flash memory for S-CON CS signal	
	2	-	DRAM for S-CON	
	1	-	VGA connected	1: Connected
	0	-	DRAM for S-CON	
P009 to P010	-	-	-	

F00-304-01 (2/2)

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3.5 FEEDER

• Feeder (1/2)

Address	Bit	Notation	Description	Remarks
P001	7	-	-	
	6	-	-	
	5	-	-	
	4	-	-	
	3	M3	Belt motor rotation direction signal	1: CW
	2	-	-	
	1	SL3	Paper deflecting plate solenoid drive signal	1: ON
	0	SL1	Stopper plate solenoid drive signal	1: ON
P002	7	-	-	
	6	-	-	
	5	-	-	
	4	-	-	
	3	-	-	
	2	S7	Pickup sensor signal	1: Original present
	1	S6	Delivery sensor signal	1: Original present
	0	S7	Pickup sensor signal	1: Original present
P003	7	-	-	
	6	-	-	
	5	S14	Re-circulation sensor signal	1: Original present
	4	-	-	
	3	-	-	
	2	-	-	
	1	-	-	
	0	-	-	
P004	7	-	-	
	6	-	-	
	5	-	-	
	4	S5	Pickup roller sensor	1: Original present
	3	S13	Delivery motor clock sensor signal	1: Light-blocking plate present
	2	S11	Registration roller clock sensor	1: Light-blocking plate present
	1	S9	Feed motor clock sensor signal	1: Light-blocking plate present
	0	S10	Belt motor clock sensor signal	1: Light-blocking plate present
P005	-	-	-	

T00-305-01 (1/2)

• Feeder (2/2)

Address	Bit	Notation	Description	Remarks
P006	7	M1	Pickup motor drive signal	1: ON
	6	-	-	
	5	-	-	
	4	-	-	
	3	M3	Belt motor drive signal	1: ON
	2	-	-	
	1	-	-	
	0	-	-	
P007	7	SL2	Paper retaining solenoid drive signal	1: ON
	6	CL	Clutch drive signal	1: ON
	5	BK	Brake drive signal	1: ON
	4	-	-	
	3	-	Original detection LED signal	1: ON
	2	M4	Re-circulation motor drive signal	1: ON
	1	M3	Belt motor rotation direction signal	1: CW
P008	7	-	-	
	6	-	-	
	5	MS1	DADF open/closed switch signal	0: Open
	4	MS2	Upper cover switch signal	0: Open
	3	S12	Delivery sensor 2 signal	1: Original present
	2	SW3	Push switch 3 signal	1: ON
	1	SW2	Push switch 2 signal	1: ON
	0	SW1	Push switch 1 signal	1: ON
P009	-	-	-	
P010	7	DSW1	DSW1-bit8 signal	1: ON
	6	DSW1	DSW1-bit7 signal	1: ON
	5	DSW1	DSW1-bit6 signal	1: ON
	4	DSW1	DSW1-bit5 signal	1: ON
	3	DSW1	DSW1-bit4 signal	1: ON
	2	DSW1	DSW1-bit3 signal	1: ON
	1	DSW1	DSW1-bit2 signal	1: ON
	0	DSW1	DSW1-bit1 signal	1: ON

T00-305-01 (2/2)

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3.6 COPIER

• Sorter (1/3)

Address	Bit	Notation	Description	Remarks
P001	0	SW3	push switch 3 signal	1: ON
	1	SW2	push switch 2 signal	1: ON
	2	SW1	SW1-bit6 signal	1: ON
	3	SW1	SW1-bit5 signal	1: ON
	4	SW1	SW1-bit4 signal	1: ON
	5	SW1	SW1-bit3 signal	1: ON
	6	SW1	SW1-bit2 signal	1: ON
	7	SW1	SW1-bit1 signal	1: ON
P002	0	S3	Key LED ON signal	1: ON
	1	-	-	
	2	S4	Staple absent LED signal	1: ON
	3	-	-	
	4	-	-	
	5	-	-	
	6	-	-	
	7	-	-	
P003	0	-	Sorter response (ACK) signal	
	1	-	Sorter request (REQ) signal	
	2	-	-	
	3	-	-	
	4	-	-	
	5	PI6	Joint sensor signal	1: Connected
	6	PI2	Lead cam HP detection signal	1: HP
	7	-	24V detection signal	
P004	0	S2	Bin inside paper detection signal	1: Paper present
	1	-	-	
	2	-	-	
	3	PI7	Stapler cover sensor signal	1: Open
	4	PI8	Tapler HP detection signal	0: HP
	5	PI9	Staple edging detection signal	0: Edging
	6	MS5	Staple absent detection signal	1: Staple absent
	7	MS6	Cartridge absent detection signal	1: Cartridge absent

T00-306-01 (1/3)

• Sorter (2/3)

Address	Bit	Notation	Description	Remarks
P005	0	-	-	
	1	-	Host machine response (ACK) signal	
	2	-	-	
	3	-	-	
	4	PI11	Non-sort path paper detection signal	1: paper present
	5	-	-	
	6	-	-	
	7	-	-	
P006	0	-	Sorter output (TXD) signal	
	1	-	-	
	2	-	Sorter input (RXD) signal	
	3	-	-	
	4	-	Host machine request (REQ) signal	
	5	-	-	
	6	-	-	
	7	-	-	
P007	0	MS1	Joint switch signal	1: Connected
	1	-	-	
	2	PI5	Bin unit lower limit detection signal	0: Lower limit
	3	MS3	Stapler safety detection signal	0: Obstacle present
	4	PS1	Delivery paper detection signal	1: Paper present
	5	MS4	Stapler unit swing HP detection signal	1: HP
	6	MS2	Stapler cover switch signal	1: Closed
	7	PI3	Guide bar HP detection signal	1: HP
P008	0	S1	Bin inside paper sensor LED ON signal	1: ON
	1	S1	Bin inside paper sensor LED ON signal	1: ON
	2	S1	Bin inside paper sensor LED ON signal	1: ON
	3	S1	Bin inside paper sensor LED ON signal	1: ON
	4	S1	Bin inside paper sensor LED ON signal	1: ON
	5	S1	Bin inside paper sensor LED ON signal	1: ON
	6	S1	Bin inside paper sensor LED ON signal	1: ON
	7	S1	Bin inside paper sensor LED ON signal	1: ON

T00-306-01 (2/3)

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• Sorter (3/3)

Address	Bit	Notation	Description	Remarks
P009	0	Bin shift motor current detection signal		Analog
	1	-	-	
	2	-	-	
	3	-	-	
	4	-	-	
	5	-	-	
	6	-	-	
	7	-	-	

T00-306-01 (3/3)

• Finisher (1/4)

Address	Bit	Notation	Description	Remarks
P010	0	-	Stapler connection detection signal	0: Connected
	1	MS9	Staple absent detection signal	0: Staple present
	2	PI1	Inlet paper detection signal	0: Paper present
	3	MS4	Shutter open detection signal	1: Closed
	4	MS2, 6	Swing guide open detecting switch signal	0: Closed
	5	MS5	Tray upper limit detecting switch signal	1: Upper limit
	6	MS3	Tray safety switch signal	1: Safe
	7	MS1, 7	Front door open detecting switch signal	0: Closed
P011	0	-	-	
	1	-	-	
	2	-	-	
	3	-	-	
	4	M1	Feed motor phase A output	
	5	M1	Feed motor phase B output	
	6	M1	Feed motor phase A* output	
	7	M1	Feed motor phase B* output	
P012	0	M3	Alignment motor phase A output	
	1	M3	Alignment motor phase B output	
	2	M3	Alignment motor current switch-over	
	3	-	-	
	4	-	-	
	5	-	-	
	6	-	-	
	7	-	-	

T00-306-02 (1/4)

• Finisher (2/4)

Address	Bit	Notation	Description	Remarks
P013	0	-	Buffer path paper sensor connector disconnection detection	1: Connected
	1	-	Buffer inlet paper sensor connector disconnection detection	1: Connected
	2	-	Front door open/closed sensor disconnection detection	1: Connected
	3	-	Shift motor clock sensor disconnection detection	1: Connected
	4	-	-	
	5	-	-	
	6	-	-	
	7	-	-	
P014	0	-	LED1 ON signal (*1)	1: ON
	1	PI9	Tray lift motor clock sensor 1	
	2	M1	Feed motor clock	
	3	PI19	Tray lift motor clock sensor 1	
	4	-	Shutter open sensor connector disconnection detection	1: Connected
	5	-	-	
	6	-	-	
	7	-	-	
P015	0	-	Stapler shift motor current witch	0: When ON
	1	-	Feed motor current switching	0: ON
	2	-	Stack detection start signal	1: Detection start
	3	PS1	Height sensor	
	4	MS8	Staple cartridge detection	1: Cartridge present
	5	PS1	Height sensor clock	
	6	-	-	
	7	-	-	
P016	0	PI5	Shutter open detection signal	1: Open
	1	PI8	Tray home position detection signal	1: HP
	2	-	LED2 ON signal	0: ON
	3	PI10	Delivery motor clock signal	
	4	PI16	Front door open detection signal	0: Open
	5	PI3	Delivery detection signal	0: Paper present
	6	PI14	Buffer path paper detection signal	1: Paper present
	7	PI17	Buffer path inlet paper detection signal	1: Paper present

*1: Common with LED1 on the finisher controller PCB.

T00-306-02 (2/4)

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• Finisher (3/4)

Address	Bit	Notation	Description	Remarks
P017	0	M2	Delivery motor PWM	0: ON
	1	M2	Delivery motor CCW drive output	0: CCW
	2	M5	Tray lift motor PWM	0: ON
	3	M2	Delivery motor CW drive output	0: CW
	4	M5	Tray lift motor down drive output	1: Down
	5	M5	Tray lift motor up drive output	1: Up
	6	M4	Stapler shift motor phase A output	
	7	M4	Stapler shift motor phase B output	
P018	0	M6	Stapler motor CW output	1: CW
	1	M6	Stapler motor CCW output	1: CCW
	2	PI4	Stapler tray detection signal	1: Paper present
	3	PI15	Joint detection signal	1: Connected
	4	PI21	Stapler drive HP signal	
	5	PI18	Swing guide open detection signal	0: Open
	6	PI7	Stapler HP detection signal	0: HP
	7	PI6	Alignment plate HP detection signal	0: HP
P019	0	PI20	Staple tip detection signal	0: Staple present
	1	TP1	Thermal switch signal	1: Temperature error
	2	PI1	Tray 1 paper sensor connector disconnection detection	1: Connected
	3	PI2	Tray 2 paper sensor connector disconnection detection	1: Connected
	4	PI3	Tray 3 paper sensor connector disconnection detection	1: Connected
	5	PI1	Tray1 paper detection signal	0: Paper present
	6	PI2	Tray 2 paper detection signal	0: Paper present
	7	PI3	Tray 3 paper detection signal	0: Paper present
P020	0	-	-	
	1	SL3	Buffer outlet solenoid drive signal	1: ON
	2	SL4	Interrupt tray solenoid drive signal	1: ON
	3	SL2	Buffer inlet solenoid drive signal	1: ON
	4	SL1	Flapper solenoid drive signal	1: ON
	5	SL5	Paddle solenoid drive signal	1: ON
	6	-	Solenoid timer (full suction) output	
	7	SL6	Wait solenoid drive signal	1: ON

T00-306-02 (3/4)

• Finisher (4/4)

Address	Bit	Notation	Description	Remarks
P021	0	-	Alignment guide HP sensor connector disconnection detection	1: Connected
	1	-	Stapler tray paper sensor connector disconnection detection	1: Connected
	2	-	Tray lift motor clock sensor connector disconnection detection	1: Connected
	3	-	Joint sensor connector disconnection detection	1: Connected
	4	-	Stapler drive HP sensor connector disconnection detection	1: Connected
	5	-	Tray HP sensor connector disconnection detection	1: Connected
	6	-	Inlet paper sensor connector disconnection detection	1: Connected
	7	-	Swing guide open sensor connector disconnection detection	1: Connected
P022	0	-	-	
	1	-	-	
	2	-	-	
	3	-	-	
	4	-	-	
	5	-	-	
	6	-	-	
	7	-	Feed motor current switching	0: ON
P033	-	-	24V output open circuit detection (*2)	
P034	-	-	SW1-1, 2	See T00-306-03.
P035	-	-	SW1-3, 4	See T00-306-03.
P036	-	-	SW2, 3	See T00-306-03.

*2: If 110 or higher, the 24-V power supply is normal.

T00-306-02 (4/4)

Reading	SW1-1,3/SW2	SW1-2,4/SW3
0 to 72	ON	ON
73 to 104	OFF	ON
105 to 190	ON	OFF
191 to 255	OFF	OFF

T00-306-03

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• Saddle Stitcher (1/4)

Address	Bit	Notation	Description	Remarks
P023	0	M6S	Stitch motor (rear) CW signal	0: CW
	1	M6S	Stitch motor (rear) CCW signal	0: CCW
	2	M7S	Stitch motor (front) CW signal	0: CW
	3	M7S	Stitch motor (font) CCW signal	0: CCW
	4	M2S	Folding motor CW drive signal	0: CW
	5	M2S	Folding motor CCW drive signal	0: CCW
	6	SLIS	Flapper drive signal 1	0: ON
	7	SL2S	Flapper drive signal 2	0: ON
P024	0	-	-	
	1	-	-	
	2	-	-	
	3	-	-	
	4	-	Pressure releasing solenoid drive signal	1: ON
	5	SL4S	Crescent roller contact solenoid drive signal	1: ON
	6	-	Solenoid timer (full suction) output	0: ON
	7	M4S	Paper positioning plate motor power	0: ON
P025	0	-	24V power supply down detection	1: Down
	1	PI15S	Paper retaining plate leading edge position detection signal	1: Leading edge
	2	PI11S	Delivery detection signal	0: Paper present
	3	-	-	
	4	-	-	
	5	-	-	
	6	-	-	
	7	-	-	
P026	0	-	Paper fold motor clock sensor	
	1	-	Paper push-on plate motor clock sensor	
	2	PI14S	Paper push-on plate HP detection signal	1: HP
	3	PI5S	Alignment guide HP detection signal	0: HP
	4	PI13S	Tray HP sensor	0: HP
	5	-	-	
	6	-	-	
	7	-	-	

T00-306-04 (1/4)

• Saddle Stitcher (2/4)

Address	Bit	Notation	Description	Remarks
P027	0	-	-	
	1	-	-	
	2	PI14S	Paper holding plate HP detection signal	1: HP
	3	PI5S	Alignment guide HP detection signal	0: HP
	4	-	-	
	5	-	-	
	6	-	-	
	7	-	-	
P028	0	PI7S	Paper position plate HP detection signal	0: HP
	1	PI16S	Stitcher in/out detection signal	0: In
	2	PI9S	Inlet cover open sensor connector detection	0: Connected
	3	PI17S	Vertical path paper sensor detection signal	0: Paper present
	4	PI12S	Crescent roller phase detection signal	1: Flag present
	5	PI13S	Guide HP detection signal	0: HP
	6	-	-	
	7	-	-	
P029	0	M4S	Paper positioning plate motor phase A	
	1	M4S	Paper positioning plate motor phase B	
	2	M8S	Paper holding plate motor PWM	
	3	M1S	Feed motor power	0: ON
	4	M1S	Feed motor phase A	
	5	M1S	Feed motor phase B	
	6	M1S	Feed motor reference clock	
	7	M8S	Paper holding plate motor CCW	0: CCW
P030	0	M5S	Alignment motor phase A	
	1	M5S	Alignment motor phase B	
	2	M2S	Folding motor PWM	
	3	M2S	Paper retaining motor CW	0: CW
	4	M3S	Guide plate motor phase A	
	5	M3S	Guide plate motor phase B	
	6	M3S	Guide plate motor power	0: ON
	7	M5S	Alignment motor power	0: ON

T00-306-04 (2/4)

COPIER>I/O

• Saddle Stitcher (3/4)

Address	Bit	Notation	Description	Remarks
P031	0	-	Alignment HP sensor connector disconnection detection	1: Connected
	1	-	Paper fold HP sensor connector disconnection detection	1: Connected
	2	-	Delivery door connector disconnection detection	1: Connected
	3	-	Front door open/closed sensor connector disconnection detection	1: Connected
	4	-	Paper push-on plate sensor connector disconnection detection	1: Connected
	5	-	Paper positioning HP sensor connector disconnection detection	1: Connected
	6	-		
	7	-		
P032	0	PS1S	Staple absent sensor (rear)	0: Staple absent
	1	PS2S	Staple absent sensor (front)	0: Staple absent
	2	MS1S	Inlet door switch	0: Open
	3	MS2S	Front door switch	0: Open
	4	MS3S	Delivery door switch	0: Open
	5	MS2S	Front door switch	0: Open
	6	MS1S	Inlet door switch	0: Open
	7	MS3S	Delivery door switch	0: Open
P037	0	AN0	Stitcher staple sensor (rear)	When 66 or higher, staple present
P038	0	AN1	Stitcher staple sensor (front)	When 66 or higher, staple present
P039	0	AN2	Tray paper detection signal	When 80 or higher, paper present
P040	0	AN3	Inlet cover sensor connector connection detection	When 80 or higher, connected
P041	0	AN4	Not used	
P042	0	AN5	Guide HP sensor connector connection detection	When 80 or higher, connected
P043	0	AN6	Stitcher compartment sensor connector connection signal	When 80 or higher, connected
P044	0	AN7	Paper push-on plate leading edge position sensor connector connection signal	When 80 or higher, connected

T00-306-04 (3/4)

• Saddle Stitcher (4/4)

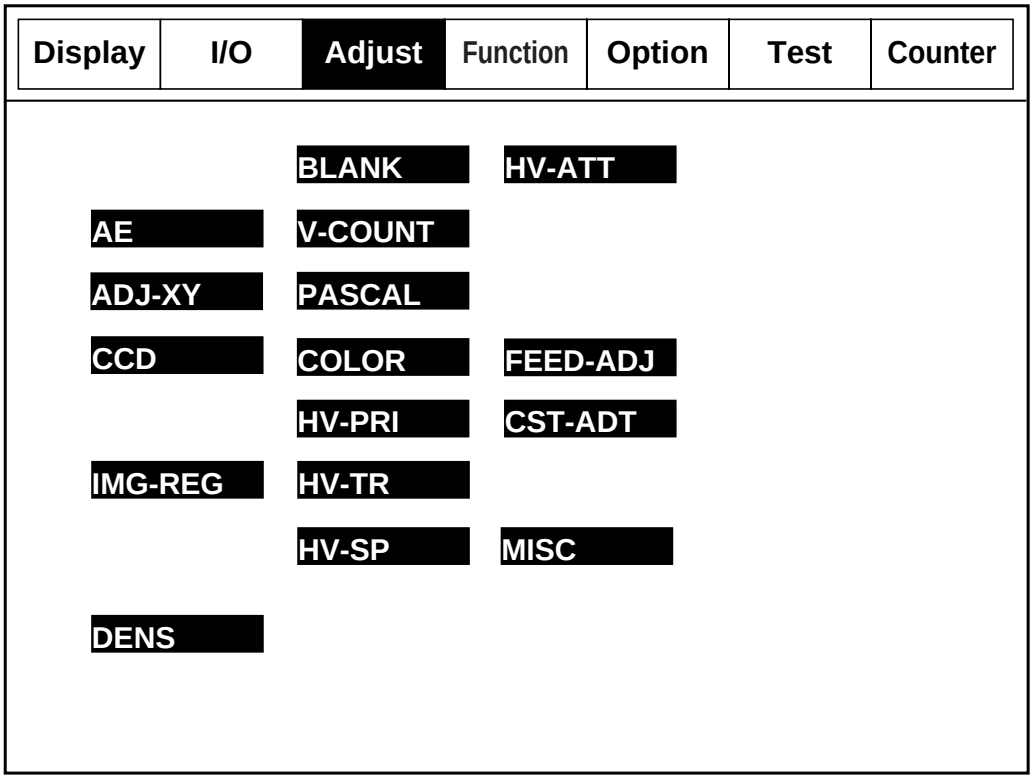
Address	Bit	Notation	Description	Remarks
P045	0	DIPSW1 DIPSW1-bit8		
	1	DIPSW1 DIPSW1-bit7		
	2	DIPSW1 DIPSW1-bit6		
	3	DIPSW1 DIPSW1-bit5		
	4	DIPSW1 DIPSW1-bit4		
	5	DIPSW1 DIPSW1-bit3		
	6	DIPSW1 DIPSW1-bit2		
	7	DIPSW1 DIPSW1-bit1		

T00-306-04 (4/4)

COPIER>ADJUST

4 Adjustment Mode (ADJUST)

4.1 COPIER/PRINTER



F00-400-01

<AE>

Use it to adjust AE mode.

AE-TBL	Use it to change the setting if you want to improve the reproduction of characters or fine lines (high-density areas) in 'AE mode with priority on speed'. It changes the γ curve used for processing in text mode to suit the selected setting. It is valid only in black-and-white/text mode. **Settings** **1 to 9 (whole number)** **Default** **5** A higher setting makes text darker.
BT-TBL	Use it to change the setting if you want to improve the reproduction of characters or fine lines (high-density areas) in 'AE mode with priority on image quality'. It changes the γ curve used for processing in text mode to suit the setting. It is good only in black-and-white/text mode. **Settings** **1 to 9 (whole number)** **Default** **5** A higher setting makes text darker.

COPIER>ADJUST

<ADJ-XY>

Use it to adjust the image read start position.

ADJ-X

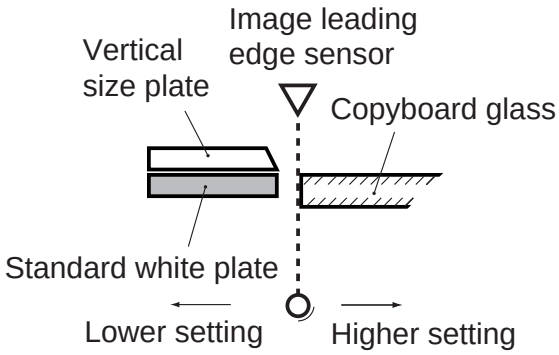
Use it to adjust the scanner image leading edge position (image read start position in sub scanning direction).

- Use it to adjust the distance from the scanner HP sensor to the image read start position.

Setting **0 to 32**

Default **Factory setting**

A change by '8' shifts the image by 1 mm



F00-400-02

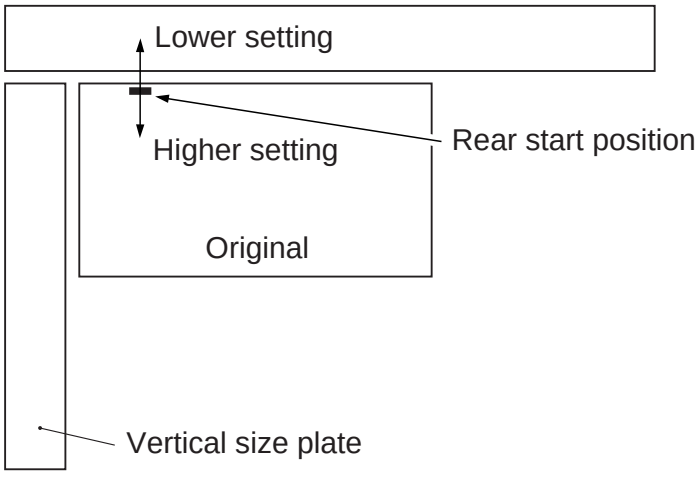
ADJ-Y

Use it to adjust the CCD read start position (image start position in main scanning direction).

Setting **0 to 255**

Default **Factory setting**

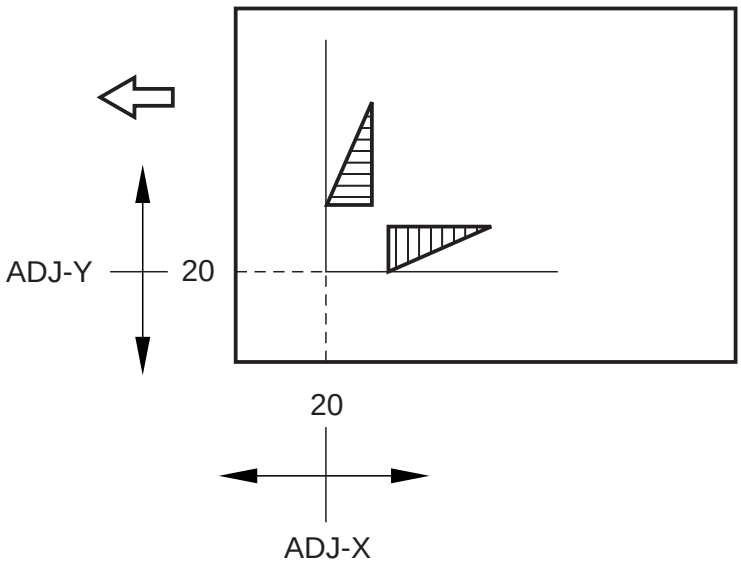
A change by '24' shifts the image by 1 mm.



F00-400-03

Use it to adjust the image read start position.

1) Make the following selections: extension mode>shift>keypad input; then, enter ‘left: 20 mm’ and ‘bottom: 20 mm’.
2) While the <ADJ-XY> screen is on the display, press the Copy Start key.
   - As shown in the figure, a copy will be made with a shift of about 20 mm.
3) If part of the image is missing, decrease the setting of ADJ-X, ADJ-Y.
4) If part outside the image is copied, decrease the setting of ADJ-X, ADJ-Y.



F00-400-04

COPIER>ADJUST

<CCD>

Use it to make CCD-related adjustments.

W-PLT-X/Y/Z	Use it to enter the while level data of the standard white plate.
Default	**Factory setting**
A-RG/B-RG	Use it to enter the color displacement correction value (correction dependent on the reader unit) in RG sub scanning direction.
Default	**Factory setting**
A-GB/B-GB	Use it to enter the color displacement correction value (correction dependent on the reader unit) in GB sub scanning direction.
Default	**Factory setting**
AL-RG	Use it to enter the color displacement correction (correction dependent on the lens of the CCD unit) in RG sub scanning direction.
Default	**Factory setting**
AL-GB	Use it to enter the color displacement value (correction dependent on the lens of the CCD unit) in GB sub scanning direction.
Default	**Factory setting**

<IMG-REG>

Use it to adjust the image position. (Color displacement may be corrected using <color displacement correction> in user mode. This mode is intended for entering data after replacing the DC controller PCB.)

REG-H-Y/M/C

Use it to adjust the image write start position (main scanning direction; in relation to the LED exposure unit).

- It keeps the Bk setting unchanged, while changing other color settings to suit the Bk setting to correct color displacement.

Settings **-70 to +70**

Default **Factory setting**

An increase by '1' shifts the image toward the rear by a single pixel.

REG-V-Y/M/C

Use it to adjust (coarse adjustment) the image write start position (sub scanning direction; in relation to the LED exposure unit).

- It keeps the Bk setting unchanged, while changing other color settings to suit the BK setting to correct color displacement.

Settings **-48 to +48**

Default **Factory setting**

An increase by '1' shifts the image toward the trailing edge by a single pixel.

REG-VS-Y/M/C

Use it to adjust (fine adjustment) the image start position (sub scanning direction; in relation to the LED exposure unit).

- It keeps the Bk setting unchanged, while changing other color settings to suit the Bk setting to correct color displacement.

Settings **-7 to +7**

Default **Factory setting**

An increase by '1' shifts the image toward the trailing edge by a 1/16 pixel.

COPIER>ADJUST

<DENS>

Use it to enter a developer density signal level.

SGNL-Y/M/C/K

Use it to enter the initial density signal level of the developer.

Settings **0 to 255**

Default **0**

SIGG-Y/M/C/K

Use it to enter the initial density signal gain level of the developer for ATR control.

Settings **0 to 255**

Default **0**

<BLANK>

Use it to correct a non-image width.

BLANK-T	
	Use it to adjust the image mask position (sub scanning direction; in relation to the LED exposure unit).
Settings	**1 to 473**
Default	**Factory setting**
	An increase by '1' increases the non-image width (leading edge only) by a single pixel.
BLANK-L	
	Use it to adjust the image mask position (sub scanning direction; in relation to the LED exposure unit).
Settings	**1 to 473**
Default	**Factory setting**
	An increase by '1' increases the non-image width (front edge only) by a single pixel.
BLANK-R	
	Use it to adjust the image mask position (main scanning direction; in relation to the LED exposure unit).
Settings	**1 to 473**
Default	**Factory setting**
	An increase by '1' increases the non-image width (rear edge only) by a single pixel.
BLANK-B	
	Use it to adjust the image mask position (sub scanning direction; in relation to the LED exposure unit).
Settings	**1 to 473**
Default	**Factory setting**
	An increase by '1' increases the non-image width (rear edge only) by a single pixel.

COPIER>ADJUST

<V-CONT>

Use it to adjust the contrast potential.

VCONT-Y/M/C/K

Use it to adjust the contrast potential.

Settings **-8 to +8**

Default **0**

A higher setting makes the images darker.

VBACK-Y/M/C/K

Use it to adjust the de-fogging potential.

Settings **-5 to +5**

Default **0**

A higher setting makes the images darker.

<PASCAL>

Use it to adjust auto gradation correction.

P-OFST-Y/M/C/K

Use it to change the offset value of the solid density area target value for auto gradation correction.

Settings **-20 to +20**

Default **0**

A lower setting makes the solid density areas of images darker.

DMXCT-Y/M/C/K

Use it to specify whether to use the data occurring after auto gradation correction (data for solid density correction).

It is valid only when '1' is set to OPTION>BODY>PASCAL.

If '0', the data will not be used regardless of the setting.

Settings **0: Do not use data, 1: use data**

Default **1**

LUTCT-Y/M/C/K

Use it to specify whether to use data (for gradation area correction) occurring after auto gradation correction.

It is valid only when '1' is set to OPTION>BODY>PASCAL.

Settings **0: Do no use data, 1: use data**

Default **1**

COPIER>ADJUST

<COLOR>

Use it to adjust color balance.

ADJ-Y/M/C/K

Use it to make up for ‘color balance adjustment’ in user mode.

- Be sure that ‘0’ is set to ‘color balance adjustment’ in user mode.

Settings **-8 to +8**

Default **0**

A higher setting makes the images darker.

OFST-Y/M/C/K

Use it to make up for light-area density.

Settings **-8 to +8**

Default **0**

A higher setting makes the images darker.

<HV-PRI>

Use it to adjust the injection charging assembly high voltage.

INJ-Y/M/C/K

Use it to adjust the injection AC bias.
If fogging occurs in the white background of an output (and if the fogging still occurs when the setting of DENS-Y/M/C/K is correct and toner discharge is forced in service mode), use it to adjust the injection AC bias.

Settings **-2 to +2 (whole number)**
Default **0**

A higher setting increases the AC peak-to-peak voltage and, as a result, fogging/ghosting will be reduced.

SUB-Y/M/C/K

Use it to adjust the auxiliary charging bias.
Use it to adjust the auxiliary bias if ghosting occurs.

Settings **-2 to +2 (whole number)**
Default **0**

A higher setting increases the auxiliary charging bias (DC); as a result, ghosting will be reduced.

SUB-Y/M/C/K-NI

Use it to adjust the auxiliary charging bias (non-image area).
Over time, toner tends to collect inside the injection changing assembly, causing fogging. To prevent the problem, the auxiliary charging bias (non-image area) may be adjusted using this mode item.

Settings **-2 to +2 (whole number)**
Default **0**

A higher setting increases the auxiliary charging bias in discharge sequence during last rotation and between sheets; as a result, discharge of toner from the injection charging assembly is promoted.

COPIER>ADJUST

<HV-TR>

Use it to adjust the transfer high-voltage output.
(A higher setting increases the output.)
Default: 0

HV-TR	Use it to adjust the offset level of the transfer high voltage. The level under each condition may be adjusted at the same time.
TR-N1L	Use it to adjust the output occurring while plain paper/single-sided copy (or 1st side of a double-sided copy) is being fed in a low-humidity environment.
TR-N2L	Use it to adjust the output occurring while plain paper/double-sided copy (i.e., its 2nd side) is being fed in a low-humidity environment.
TR-T-1L	Use it to adjust the output occurring while thick paper/single-sided copy (or the 1st side of a double-sided copy) is being fed in a low-humidity environment.
TR-T-2L	Use it to adjust the output occurring while thick paper/double-sided copy (i.e., its 2nd side) is being fed in a low-humidity environment.
TR-OHPL	Use it to adjust the output occurring while a transparency is being fed in a low-humidity environment.
TR-S1-1L	Use it to adjust the output occurring while special paper/single-sided copy (or the 1st side of a double-sided copy) is being fed in a low-humidity environment.
TR-PO-1L	Use it to adjust the output occurring while a postcard/single-sided copy (or the 1st side of a double-sided copy) is being fed in a low-humidity environment.
TR-N1N	Use it to adjust the output occurring while plain paper/single-sided copy (or the 1st side of a double-sided copy) is being fed in a normal humidity environment.
TR-N2N	Use it to adjust the output occurring while plain paper/double-sided copy (i.e., its 2nd side) is being fed in a normal-humidity condition.

TR-T-1N	Use it to adjust the output occurring while thick paper/single-sided copy (or the 1st side of a double-sided copy) is being fed in a normal-humidity environment.
TR-T-2N	Use it to adjust the output of thick paper/double-sided copy (i.e., its 2nd side) is being fed in a normal-humidity environment.
TR-OHPN	Use it to adjust the output occurring while a transparency is being fed in a normal-humidity environment.
TR-S1-1N	Use it to adjust the output occurring while special paper/single-sided copy (i.e., the 1st side of a double-sided copy) is being fed in a normal-humidity environment.
TR-PO-1N	Use it to adjust the output occurring while a postcard/single-sided copy (or the 1st side of a double-sided copy) is being fed in a normal-humidity environment.
TR-N1H	Use it to adjust the output occurring while plain paper/single-sided copy (or the 1st side of a double-sided copy) is being fed in a high-humidity environment.
TR-N2H	Use it to adjust the output occurring while plain paper/double-sided copy (i.e., its 2nd side) is being fed in a high-humidity environment.
TR-T-1H	Use it to adjust the output occurring while thick paper/single-sided copy (or the 1st side of a double-sided copy) is being fed in a high-humidity environment.
TR-T-2H	Use it to adjust the output occurring while thick paper/double-sided copy (i.e., its 2nd side) is being fed in a high-humidity environment.
TR-OHPH	Use it to adjust the output occurring while thick paper/double-sided copy (i.e., its 2nd side) is being fed in a high-humidity environment.
TR-S1-1H	Use it to adjust the output occurring while special paper/single-sided copy (or the 1st side of a double-sided copy) is being fed in a high-humidity environment.

COPIER>ADJUST

TR-PO-1H	Use it to adjust the output occurring while a postcard/single-sided copy (or the 1st side of a double-sided copy) is being fed in a high-humidity environment.
TR-K-N1L	Use it to adjust the output occurring while plain paper/black mono/single-sided copy (or the 1st side of a double-sided copy) is being fed in a low-humidity environment.
TR-K-N1N	Use it to adjust the output occurring while plain paper/black mono/single-sided copy (or the 1st side of a double-sided copy) is being fed in a normal-humidity environment.
TR-K-N1H	Use it to adjust the output occurring while plain paper/black mono/single-sided copy (or the 1st side of a double-sided copy) is being fed in a high-humidity environment.
TR-K-N2L	Use it to adjust the output occurring while plain paper/black mono/double-sided copy (i.e., its 2nd side) is being fed in a low-humidity environment.
TR-K-N2N	Use it to adjust the output occurring while plain paper/black mono/double-sided copy (i.e., the 2nd side of a double-sided copy) is being fed in a normal-humidity environment.
TR-K-N2H	Use it to adjust the output occurring while plain paper/black mono/double-sided copy (i.e., the 2nd side of a double-sided copy) is being fed in a high-humidity environment.

<HV-SP>

Use it to adjust the separation charging bias.
Settings: -3 to +3
(A higher setting increases the output.)
Default: 0

SP-N1L	Use it to adjust the output occurring while plain paper/single-sided copy (or the 1st side of a double-sided copy) is being fed in a low-humidity environment.
SP-N2L	Use it to adjust the output occurring while plain paper/double-sided copy (i.e., its 2nd side) is being fed in a low-humidity environment.
SP-T-1L	Use it to adjust the output occurring while thick paper/single-sided copy (or the 1st side of a double-sided copy) is being fed in a low-humidity environment.
SP-T-2L	Use it to adjust the output occurring while thick paper/double-sided copy (i.e., its 2nd side) is being fed in a low-humidity environment.
SP-OHP-L	Use it to adjust the output occurring while a transparency is being fed in a low-humidity environment.
SP-S1-1L	Use it to adjust the output occurring while special paper/single-sided copy (or the 1st side of a double-sided copy) is being fed in a low-humidity environment.
SP-PO-1L	Use it to adjust the output occurring while a postcard/single-sided copy (or the 1st side of a double-sided copy) is being fed in a low-humidity environment.
SP-N1N	Use it to adjust the output occurring while plain paper/single-sided copy (or the 1st side of a double-sided copy) is being fed in a normal-humidity environment.
SP-N2N	Use it to adjust the output occurring while plain paper/double-sided copy (i.e., its 2nd side) is being fed in a normal-humidity environment.

COPIER>ADJUST

SP-T-1N	Use it to adjust the output occurring while thick paper/single-sided copy (or the 1st side of a double-sided copy) is being fed in a normal-humidity environment.
SP-T-2N	Use it to adjust the output occurring while thick paper/double-sided copy (i.e., its 2nd side) is being fed in a normal-humidity environment.
SP-OHP-N	Use it to adjust the output occurring while a transparency is being fed in a normal-humidity environment.
SP-S1-1N	Use it to adjust the output occurring while special paper/single-sided copy (or the 1st side of a double-sided copy) is being fed in a normal-humidity environment.
SP-PO-1N	Use it to adjust the output of a postcard/single-sided copy (or the 1st side of a double-sided copy) is being fed in a normal-humidity environment.
SP-N1H	Use it to adjust the output occurring while plain paper/single-sided copy (1st side of a double-sided copy) is being fed in a high-humidity environment.
SP-N2H	Use it to adjust the output occurring while plain paper/double-sided copy (i.e., its 2nd side) is being fed in a high-humidity environment.
SP-T-1H	Use it to adjust the output occurring while thick paper/single-sided copy (or the 1st side of a double-sided copy) is being fed in a high-humidity environment.
SP-T-2H	Use it to adjust the output occurring while plain paper/double-sided copy (or the 2nd side of a double-sided copy) is being fed in a high-humidity environment.
SP-OHP-H	Use it to adjust the output occurring while a transparency is being fed in a high-humidity environment.
SP-S1-1H	Use it to adjust the output occurring while special paper/single-sided copy (or the 1st side of a double-sided copy) is being fed in a high-humidity environment.

SP-PO-1H	Use it to adjust the output occurring while a postcard/single-sided copy (or the 1st side of a double-sided copy) is being fed in a high-humidity environment.

COPIER>ADJUST

<HV-ATT>

Use it to adjust the auxiliary feeding roller charging bias.

Settings: -4 to +4
(A higher setting increases the output.)

Default: 0

AT-N1L	Use it to adjust the output occurring while plain paper/single-sided copy (or the 1st side of a double-sided copy) is being fed in a low-humidity environment.
AT-N2L	Use it to adjust the output occurring while plain paper/double-sided copy (i.e., its 2nd side) is being fed in a low-humidity environment.
AT-T-1L	Use it to adjust the output occurring while thick paper/single-sided copy (or the 1st side of a double-sided copy) is being fed in a low-humidity environment.
AT-T-2L	Use it to adjust the output occurring while thick paper/double-sided copy (i.e., its 2nd side) is being fed in a low-humidity environment.
AT-OHPL	Use it to adjust the output occurring while a transparency is being fed in a low-humidity environment.
AT-S1-1L	Use it to adjust the output occurring while special paper/single-sided copy (or the 1st side of a double-sided copy) is being fed in a low-humidity environment.
AT-PO-1L	Use it to adjust the output occurring while a postcard/single-sided copy (or the 1st side of a double-sided copy) is being fed in a low-humidity environment.
AT-N1N	Use it to adjust the output occurring while plain paper/single-sided copy (or the 1st side of a double-sided copy) is being fed in a normal-humidity condition.
AT-N2N	Use it to adjust the output occurring while plain paper/double-sided copy (i.e., its 2nd side) is being fed in a normal-humidity environment.

AT-T-1N	Use it to adjust the output occurring while thick paper/single-sided copy (or the 1st side of a double-sided copy) is being fed in a normal-humidity environment.
AT-T-2N	Use it to adjust the output occurring while thick paper/double-sided copy (i.e., its 2nd side) is being fed in a normal-humidity environment.
AT-OHPN	Use it to adjust the output occurring while a transparency is being fed in a normal-humidity environment.
AT-S1-1N	Use it to adjust the output occurring while special paper/single-sided copy (or the 1st side of a double-sided copy) is being fed in a normal-humidity environment.
AT-PO-1N	Use it to adjust the output of a postcard/single-sided copy (or the 1st side of a double-sided copy) is being fed in a normal-humidity environment.
AT-N1H	Use it to adjust the output occurring while plain paper/single-sided copy (or the 1st side of a double-sided copy) is being fed in a high-humidity environment.
AT-N2H	Use it to adjust the output occurring while plain paper/double-sided copy (i.e., its 2nd side) is being fed in a high-humidity environment.
AT-T-1H	Use it to adjust the output occurring while thick paper/single-sided copy (or the 1st side of a double-sided copy) is being fed in a high-humidity environment.
AT-T-2H	Use it to adjust the output occurring while thick paper/double-sided copy (i.e., its 2nd side) is being fed in a high-humidity environment.
AT-OHPH	Use it to adjust the output occurring while a transparency is being fed in a high-humidity environment.
AT-S1-1H	Use it to adjust the output occurring while special paper/single-sided copy (or the 1st side of a double-sided copy) is being fed in a high-humidity condition.

COPIER>ADJUST

AT-PO-1H	Use it to adjust the output occurring while a postcard/single-sided copy (1st side of a double-sided copy) is being fed in a high-humidity environment.

<FEED-ADJ>

Use it to make feeder system-related adjustments.

LOOP-CST	
	Use it to adjust the level of arching when the cassette is used as the source of paper. If jams occur often over the pre-registration sensor, try increasing the setting. If paper tends to move askew, try increasing the setting.
Settings	**0 to 360** A higher setting increases the arching.
Default	**Factory setting**
ADJ-C1	
	Use it to adjust the image write position (in relation to the LED exposure unit) in main scanning direction.
Settings	**-48 to 48** An increase by '1' shifts the image toward the rear by a single pixel.
Default	**Factory setting**
ADJ-REFF	
	Use it to adjust the image write start position (in relation to the LED exposure unit) in main scanning direction for re-pickup.
Settings	**-48 to 48** An increase by '1' shifts the image toward the rear by a single pixel.
Default	**Factory setting**
ADJ-VSYC	
	Use it to adjust the image write start position (in relation to the LED exposure unit) in sub scanning direction for plain paper.
Settings	**-48 to 48** An increase by '1' shifts the image toward the trailing edge by a single pixel.
Default	**Factory setting**
ADJ-V-OHP	
	Use it to adjust the image write position (in relation to the LED exposure unit) in sub scanning direction for transparencies.
Settings	**-48 to 48** An increase by '1' shifts the image toward the rear by a single pixel.
Default	**Factory setting**

COPIER>ADJUST

ADJ-V-SP	
	Use it to adjust the image write start position (in relation to the LED exposure unit) in sub scanning direction for special paper.
Settings	**-48 to 48** An increase by '1' shifts the image toward the trailing edge by a single pixel.
Default	**Factory setting**
ADJ-V-THC	
	Use it to adjust the image write start position in (in relation to the LED exposure unit) in sub scanning direction for thick paper.
Settings	**-48 to 48** An increase by '1' shifts the image toward the trailing edge by a single pixel.
Default	**Factory setting**

<CST-ADJ>

Use it to make cassette-/manual feed tray-related adjustments. (The result of executing FUNCTION>CST>MF-A4R/A6R/A4 is indicated in the form of a setting.)

MF-A4R	
	Use it to enter the paper width basic value for the manual feed tray. (A4R)
Settings	**0 to 1023**
Default	**Factory setting**
MF-A6R	
	Use it to enter the paper width basic value for the manual feed tray. (A6R)
Settings	**0 to 1023**
Default	**Factory setting**
MF-A4	
	Use it to enter the paper width basic value for the manual feed tray. (A4)
Settings	**0 to 1023**
Default	**Factory setting**

COPIER>ADJUST

<MISC>

Use it to make other adjustments.

SEG-ADJ	
	Use it to adjust the separation level for text and photos in text/photo/map mode.
Settings	**-4 to +4** +: Tends to identify as photo. -: Tends to identify as text.
Default	**0**
K-ADJ	
	Use it to adjust the black identification level for black character processing.
Settings	**-3 to +3** A higher setting leads to a higher incidence of identification as black.
Default	**0**
ACS-ADJ	
	Use it to adjust the level of color identification sensitivity for ACS.
Settings	**-3 to +3** +: Tends to identify as black original. -: Tends to identify as color original.
Default	**0**
ACS-EN	
	Use it to adjust the ACS identification area (both main and sub scanning direction). Within the image read area in ACS, appreciable displacement along the leading edge, trailing edge, and left/right (main scanning direction) tends to cause wrong ACS identification. To free ACS identification from the effects of color displacement, this mode item may be used to reduce displacement ACS area.
Settings	**-2 to +2** +: Larger identification area (strong effects of color displacement) -: Smaller identification area (weak effects of color displacement)
Default	**+1**

ACS-CNT

Use it to adjust the area in which the pixels for identification of color in ACS identification are counted.

Settings **-2 to +2**

+: Larger identification area. (An original tends to be identified as a color original if it has fine colored line; on the other hand, the effects of color displacement are strong.)

-: Smaller identification area (An original tends to be identified as a non-color original unless it has color in a wide area; on the other hand, the effects of displacement are weak.)

Default **+1**

TRAREA-1/2/3/4/5/6/7/8

Use it to enter transfer belt thickness data.

Settings **600 to 900**

Default **Factory setting**

COPIER>ADJUST

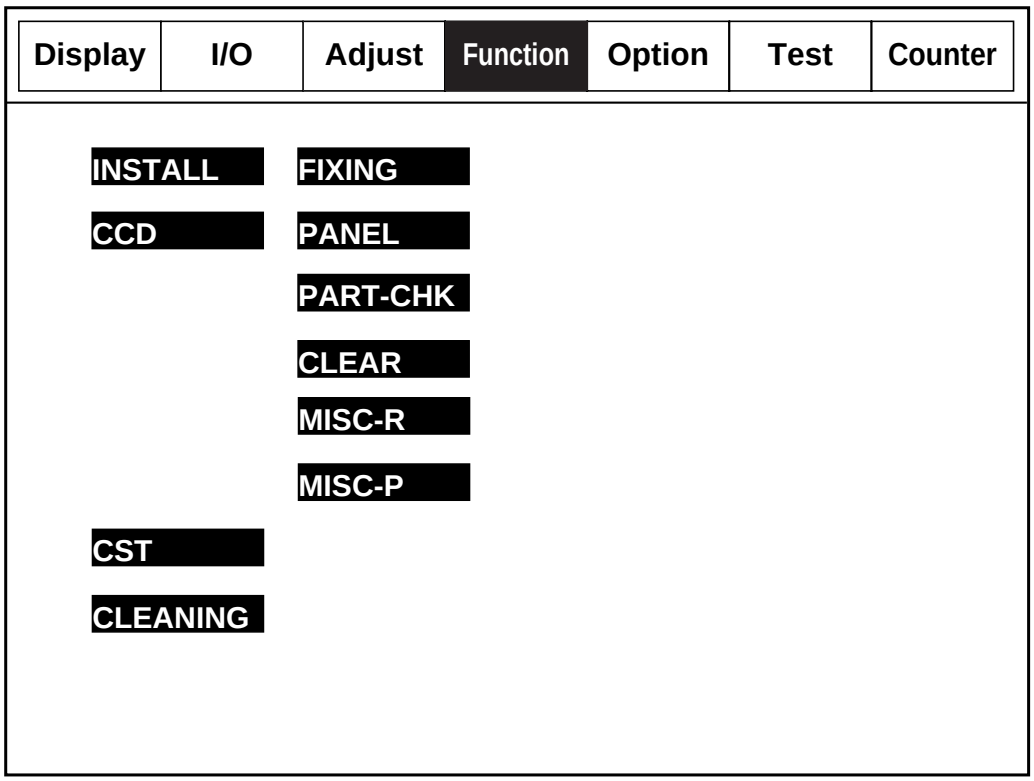
4.2 FEEDER

The following items are available under FEEDER>ADJUST.

DOCST-RP	
Settings	Use it to adjust the original stop position for bottom pickup. **-100 to 100 (unit: 0.5 mm, default: 0)** 1) Select this item, and place an original on the original tray. 2) Press the OK key. (The original will be fed.) 3) Open the DF slowly, and check the position of the original on the copyboard glass. • If the original is to the left of the reference point, increase the setting. • If the original is to the right of the point, decrease the setting.

5 Operation/Inspection Mode (FUNCTION)

5.1 COPIER/PRINTER



F00-500-01

The state of the machine is indicated in the upper right of the screen. Pay attention to the indication while servicing the machine; the following notations are used:

<READY> Ready for servicing/copying operation.
<SERVICE> Servicing operation under way.
<DOOR> Door open.
<WAITING> In wait.
<NO-PAPER> Paper absent.

COPIER>FUNCTION

<INSTALL>

Use it for installation work.

STIR-Y/M/C/K	Use it to stir the developer inside the selected developing assembly. **1) Select this item to highlight.** **2) Press the OK key.** • The operation starts. The operation ends automatically in about 2 min.
STIR-4	Use it to stir all developer (all developing assemblies) at the same time. **1) Select this item to highlight.** **2) Press the OK key.** • The operation starts. The operation ends automatically in about 2 min.
SPLY-H-Y/M/C/K	Use it to send toner to the hopper from the selected toner cartridge. **1) Select this item to highlight.** **2) Press the OK key.** • The operation starts. The operation ends automatically in about 1 min 30 sec.
SPLY-H-4	Use it to send toner to the hoppers from all toner cartridges. **1) Select this item to highlight.** **2) Press the OK key.** • The operation starts. The operation ends automatically in about 1 min 30 sec.
STIR-CGY/CGM/CGC/CGK	Use it to stir the injection carrier inside the selected injection charging assembly. **1) Select this item to highlight.** **2) Press the OK key.** • The operation starts. The operation ends automatically in about 2 min.

STIR-CG4

Use it to stir the injection carrier of all injection charging assembly.

1) Select this item to highlight.

2) Press the OK key.

• The operation starts. The operation ends automatically in about 2 min.

<CCD>

Use it to execute CCD-related auto adjustments.

CCD-ADJ

Use it to adjust the gain for the analog processor (on the AP-IP PCB).

1) Select this item to highlight.

2) Press the OK key.

• The operation starts. The operation ends automatically.

<CST>

Use it to execute cassette-/manual feed tray-related auto adjustments.

MF-A4R/A6R/A4

Use it to register the paper width basic value for the manual feed tray.

1) Place paper on the manual feed tray, and adjust the side guide to the paper width.

2) Select this item to highlight.

3) Press the OK key.

COPIER>FUNCTION

<CLEANING>

Use it to execute cleaning.

INJY/INJM/INJC/INJK-CLN	Use it to clean the selected injection charging assembly. **1) Select this item to highlight.** **2) Press the OK key.** • The operation starts. The operation ends automatically in about 2 min.
INJ4-CLN	Use it to clean all injection charging assemblies. **1) Select this item to highlight.** **2) Press the OK key.** • The operation starts. The operation ends automatically in about 2 min.
SUBY/SUBM/SUBC/SUBK-CLN	Use it to clean the auxiliary charging brush of the selected color. **1) Select this item to highlight.** **2) Press the OK key.** • The operation starts. The operation ends automatically in about 30 sec.
SUB4-CLN	Use it to clean all auxiliary brushes. **1) Select this item to highlight.** **2) Press the OK key.** • The operation starts. The operation ends automatically in about 30 sec.

<FIXING>

Use it to execute fixing assembly-related auto adjustments.

NIP-CHK	Use it to generate a test print for measuring the fixing roller nip width. **1) Select this item to highlight.** **2) Press the OK key.** • The operation (of generating a test print) starts. • Paper is picked up, stopped between the fixing rollers once, and then discharged in about 20 sec.

COPIER>FUNCTION

<PANEL>

Use it to check the operation of the control panel.

LCD-CHK	Use it to check the LCD for missing dots. **1) Select this item to highlight.** **2) Press the OK key.** • The entire face of the LCD turns on in white for several seconds and then in blue for several seconds. (This operation is repeated.) • To stop, press the Stop key.
LED-CHK	Use it to start a check on the activation of the LEDs on the control panel. **1) Select the item to highlight.** **2) Press the OK key.** • The LEDs on the control panel will turn on in sequence. • To stop the operation, press <LED-OFF>.
LED-OFF	Use it to end a check on the activation of LEDs on the control panel. **1) Select this item to highlight.** **2) Press the OK key.** • The LEDs on the control panel go off.
KEY-CHK	Use it to start a check on key inputs. **1) Select this item to highlight.** **2) Press the key to check.** • The indication changes according to the key pressed (T00-500-01). • To end this item and to move to the next item, <KEY-CHK> must be pressed once again.

TOUCHCHK

Use it to adjust the coordinates on the control panel touch display (i.e., to match the point of a press on the touch display and coordinates on the LCD).

1) Select this item to highlight.

2) Press the OK key.

- The LCD on the control panel will indicate '+'.

3) Press '+'.

- '+' appears in different locations on the LCD. (Repeat these steps nine times.)
- To end this item and move to the next item, <TOUCH CHECK> must be pressed once again.

Key	Indication on screen	Key	Indication on screen	Key	Indication on screen
Copy	COPY	Interrupt	INTERRUPT	Full color	F-COLOR
Extension	ETC	0 to 9, #, *	0 to 9, #, *	Black	BLACK
Reset	RESET	Clear	CLEAR	Start	START
Guide	?	ID	ID	Stop	STOP
User mode	M	ACS	ACS	Power save	STAND BY

T00-500-01

COPIER>FUNCTION

<PAT-CHK>

Use it check the operation of various loads.

CL	Use it to select the clutch to check. **1) Select this item to highlight.** **2) Enter the code of the clutch in question using the keypad.** **3) Press the OK key.** • The operation starts in response to <CL-ON>.
CL-ON	Use it to start a check on operation. **1) Select this item to highlight.** **2) Press the OK key.** • clutch turns → on remains off for 10 sec → turns on remains off for 10 sec → turns on → turns off
FAN	Use it to select the fan to check. **1) Select this item to highlight.** **2) Enter the code of the fan in question using the keypad.** **3) Press the OK key.** • The operation starts in response to <FAN-ON>.
FAN-ON	Use it to start a check on operation. **1) Select this item to highlight.** **2) Press the OK key.** • fan remains on for 10 sec → turns off
MTR	Use it to select the motor to check. **1) Select this item to highlight.** **2) Enter the code of the motor.** **3) Press the OK key.** • The operation starts in response to <MTR-ON>.

MTR-ON	Use it to start a check on operation. **1) Select this item to highlight.** **2) Press the OK key.** • motor remains on for 10 sec → turns off
SL	Use it to select the solenoid to check. **1) Select this item to highlight.** **2) Enter the code of the solenoid in question using the keypad.** **3) Press the OK key.** • The operation starts in response to <SL-ON>.
SL-ON	Use it to start a check on operation. **1) Select this item to highlight.** **2) Press the OK key.** • solenoid turns on → remains off for 10 sec → turns on → remains off for 10 sec → turns on → off

No.	Motor	Clutch	Solenoid	Fan
1	Pickup main motor (M2)	Pickup clutch (CL1)	Pickup solenoid (SL1)	Fixing fan (FM1)
2	Delivery main motor (M16)	Vertical path clutch (CL2)	Manual feed holding plate locking solenoid (SL2)	Delivery fan (FM2)
3	Pickup motor (M1)	Manual feed clutch (CL3)	Web solenoid (SL4)	Machine cooling fan (FM4)
4	DO NOT USE	Registration clutch (CL4)	Delivery flapper solenoid (SL5)	Power supply cooling fan (FM5)
5	DO NOT USE	Developing clutch Y (CL5)	Cassette pedestal pickup solenoid (SL6)	De-curling fan (FM7)
6	DO NOT USE	Injection clutch Y (CL6)	Deck pickup roller releasing solenoid (SL101)	Kit drive cooling fan (FM10)
7	DO NOT USE	Developing clutch M (CL7)	Compartment open solenoid (SL102)	Not available
8	Cartridge motor Y (M11)	Injection clutch (CL8)	DO NOT USE	Not available
9	Cartridge motor M (M12)	Developing clutch C (CL9)	DO NOT USE	Not available
10	Cartridge motor C (M13)	Injection clutch C (CL10)	DO NOT USE	Not available
11	Cartridge motor K (M14)	Developing clutch K (CL11)	DO NOT USE	Not available
12	Side registration motor (rear; M17)	Injection clutch K (CL12)	DO NOT USE	Not available
13	Side registration motor (front; M17)	Fixing clutch (CL14)	DO NOT USE	Not available
14	Drum motor Y (M3)	Fixing higher-speed clutch (CL22)	DO NOT USE	Not available
15	Drum motor M (M4)	External delivery double-speed clutch (CL16)	DO NOT USE	Not available
16	Drum motor C (M5)	Reversal double-speed clutch (CL15)	DO NOT USE	Not available
17	Drum motor K (M6)	Reversal CCW clutch (CL17)	DO NOT USE	Not available
18	Transfer belt motor (M15)	Reversal CW clutch (CL18)	DO NOT USE	Not available
19	Cassette pedestal main motor (M19)	Transfer swing clutch (CL23)	DO NOT USE	Not available
20	Cassette pedestal pickup motor (M18)	Pickup double-speed clutch (CL13)	DO NOT USE	Not available
21	Deck lifter motor (M102)	Re-pickup clutch (CL21)	DO NOT USE	Not available
22	Deck main motor (M101)	Duplex unit inlet double-speed clutch (CL20)	DO NOT USE	Not available
23	Delivery toner motor (M20)	Duplex equal-speed clutch (CL19)	DO NOT USE	Not available
24	DO NOT USE	Cassette pedestal pickup clutch (CL24)	DO NOT USE	Not available
25	DO NOT USE	Deck pickup clutch (CL102)	DO NOT USE	Not available
26	DO NOT USE	Deck feed clutch (CL101)	DO NOT USE	Not available

Caution:

- The cartridge motor is under the control of the toner level detection control mechanism, and operates only for about 1 sec if toner is present.
- Do not use items described as “DO NOT USE”; otherwise, malfunction can occur.

T00-500-02

SHV	Use it to select the high-voltage output to check. **1) Select this item to highlight.** **2) Enter the code of the high-voltage output using the keypad.** **3) Press the OK key.** • The operation starts in response to <SHV-ON>.
SHV-ON	Use it to start a check on operation. **1) Select this item to highlight.** **2) Press the OK key.** • For specifics, see the table that follows.

No.	Item	Setting	Operation of other parts
1	Auxiliary charging Y	500V	Drum rotates, injection cylinder rotates, injection AC ON, injection DC ON
2	Auxiliary charging M	500V	Drum rotates, injection cylinder rotates, injection AC ON, injection DC ON
3	Auxiliary charging C	500V	Drum rotates, injection cylinder rotates, injection AC ON, injection DC ON
4	Auxiliary charging K	500V	Drum rotates, injection cylinder rotates, injection AC ON, injection DC ON
5	Injection DC-Y	-600V	Drum rotates, injection cylinder rotates
6	Injection DC-M	-600V	Drum rotates, injection cylinder rotates
7	Injection DC-C	-600V	Drum rotates, injection cylinder rotates
8	Injection DC-K	-600V	Drum rotates, injection cylinder rotates
9	Injection AC-Y	$700V_{pp}$	Drum rotates, injection cylinder rotates
10	Injection AC-M	$700V_{pp}$	Drum rotates, injection cylinder rotates
11	Injection AC-C	$700V_{pp}$	Drum rotates, injection cylinder rotates
12	Injection AC-K	$700V_{pp}$	Drum rotates, injection cylinder rotates
13	Developing DC-Y	-350V	None
14	Developing DC-M	-350V	None
15	Developing DC-C	-350V	None
16	Developing DC-K	-350V	None
17	Developing AC-Y	–	None
18	Developing AC-M	–	None
19	Developing AC-C	–	None
20	Developing AC-K	–	None
21	Transfer-Y	10.0uA	Transfer belt rotates, transfer unit moves up, drum rotates, injection sleeve rotates, injection AC ON, injection DC ON
22	Transfer-M	10.0uA	Transfer belt rotates, transfer unit moves up, drum rotates, injection sleeve rotates, injection AC ON, injection DC ON
23	Transfer-C	10.0uA	Transfer belt rotates, transfer unit moves up, drum rotates, injection sleeve rotates, injection AC ON, injection DC ON
24	Transfer-K	10.0uA	Transfer belt rotates, transfer unit moves up, drum rotates, injection sleeve rotates, injection AC ON, injection DC ON
25	Feeding auxiliary roller bias	-0.5uA	Transfer belt rotates, transfer unit moves up, drum rotates
26	Separation charging	$10.7KV_{pp}$	None
27	LED anti-soling bias	-3000V	None

T00-500-03

<CLEAR>

Use it to reset RAM, error code, jam history, or error code history.

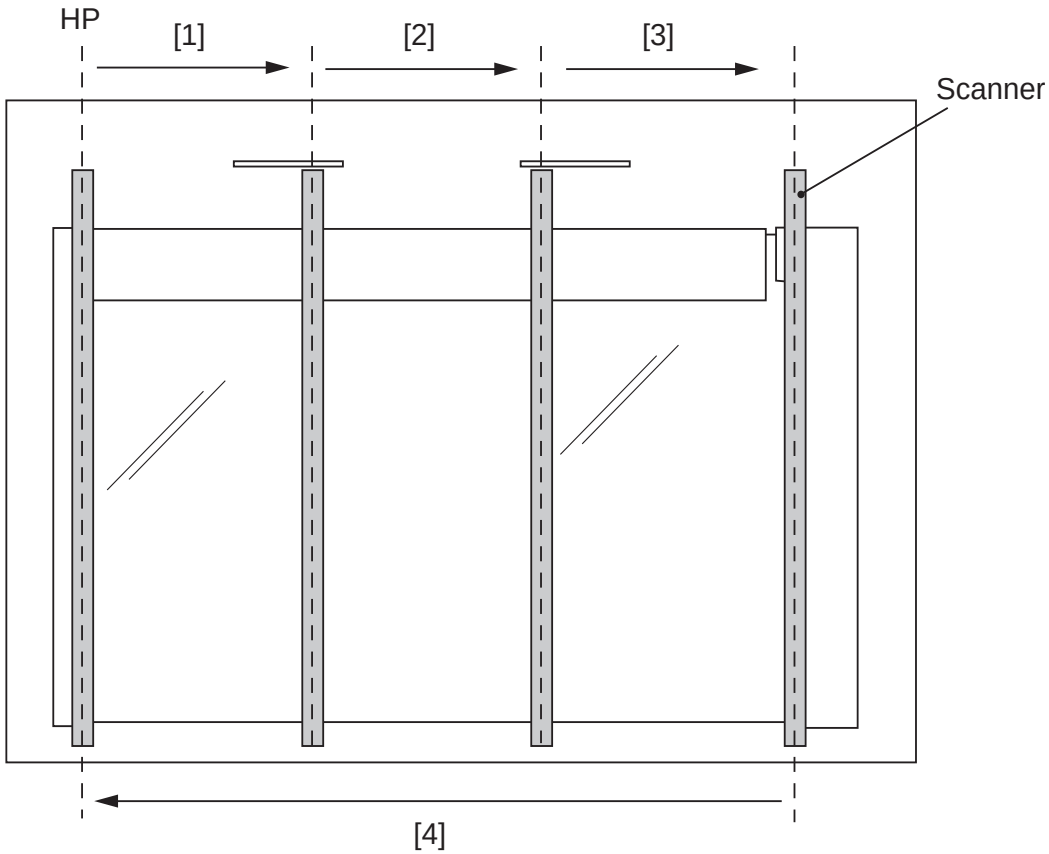
ERR	Use it to reset the following error code: • E000, E005, E717 **1) Select this item to highlight.** **2) Press the OK key. (The main power switch will not automatically turn off; be sure to turn off and then on the main power switch after ending service mode.)**
DC-CON	Use it to initialize the RAM on the DC controller PCB. **1) Select this item to highlight.** **2) Press the OK key. (The main power switch will automatically turn off.)**
R-CON	Use it to initialize the RAM on the reader controller PCB. **1) Select this item to highlight.** **2) Press the OK key. (The main power switch will automatically turn off.)**
JAM-HIST	Use it to reset the jam history. **1) Select this item to highlight.** **2) Press the OK key. (The main power switch will automatically turn off.)**
ERR-HIST	Use it to reset the error code history. **1) Select this item to highlight.** **2) Press the OK key. (The main power switch will automatically turn off.)**
S-COM	Use it to initialize the RAM on the system controller PCB. **1) Select this item to highlight.** **2) Press the OK key. (The main power switch will automatically turn off.)**
PWD-CLR	Use it to reset the password set in user mode by the system administrator. **1) Select this item to highlight.** **2) Press the OK key. (The main power switch will automatically turn off.)**

COPIER>FUNCTION

<MISC-R>

Use it to check the operation of the reader unit.

SCANLAMP	Use it to execute activation of the scanning lamp. **1) Select this item to highlight.** **2) Press the OK key. (The main power switch will automatically turn off.)** • The scanning lamp will turn and remain on for 1 sec.
SC-MOVE	Use it to check the operation of the scanner. **1) Select this item to highlight.** **2) Press the OK key. (The main power switch will automatically turn off.)** • Each press on the OK key will cause operations 1 through 4 below.



F00-500-02

LAMP-ADJ	Use it to adjust the intensity of light (if a new scanning lamp has been mounted). • For instructions, see the body text.
USE-LAMP	Use it to adjust the intensity of light (if the scanning lamp has been removed once and mounted thereafter for cleaning or the like). • For instructions, see the body text.

<MISC-P>

Use it to check the operation of the printer unit.

IP-CHK	Use it to execute self diagnosis of the AP-IP PCB. **1) Select this item to highlight.** **2) Press the OK key. (The main power switch will automatically turn off.)** • At the end of self diagnosis, the result will be indicated in terms of 'OK/NG'.
POWEROFF	Use it to execute auto power-off. **1) Select this item to highlight.** **2) Press the OK key.**
TR-DOWN	Use it to move down the transfer belt. **1) Select this item to highlight.** **2) Press the OK key.**
TR-UP	Use it to move up the transfer belt. **1) Select this item to highlight.** **2) Press the OK key.**

COPIER>FUNCTION

5.2 FEEDER>FUNCTION

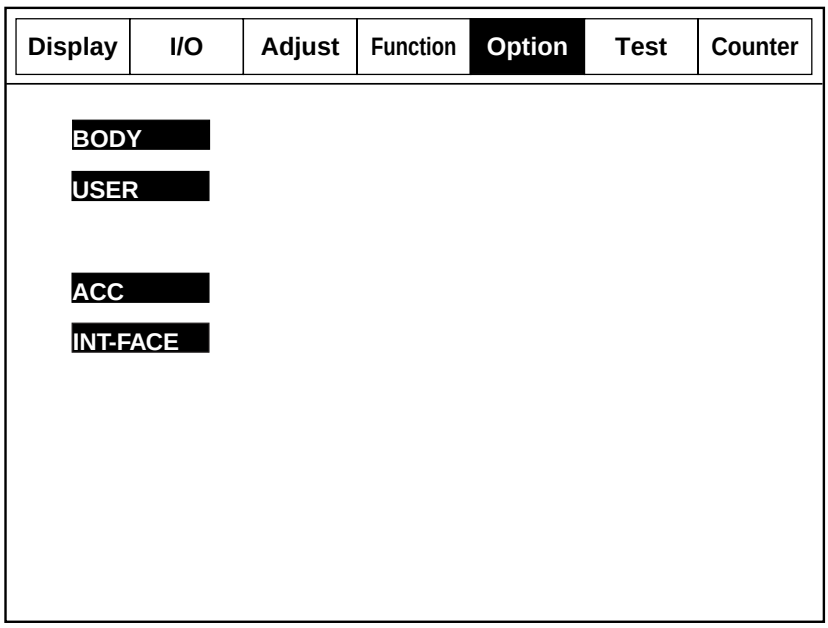
The following items are found under FEEDER>FUNCTION.

SENS-INT	Use it to initialize the sensor. **1) Select this item to highlight.** **2) Press the OK key.** • Each operation is executed; at the end of adjustment, the mode ends automatically.
UBLT-CLN	Use it to execute auto cleaning of the separation belt for top separation. **1) Select this item to highlight.** **2) Place paper moistened with solvent at the center on the original tray.** **3) Press the OK key.** • The paper will be fed halfway, and the separation belt will be rotated idly. **4) Press the OK key to end the operation.** **5) Open the upper cover, and remove the paper.** **6) Close the upper cover.**
DBLT-CLN	Use it to execute auto cleaning of the separation belt for bottom separation. **1) Select this item to highlight.** **2) Place paper moistened with solvent at the center on the original tray.** **3) Press the OK key.** • The paper will be fed halfway, and the separation belt will be rotated idly. **4) Press the OK key to end the operation.** **5) Open the upper cover, and remove the paper.** **6) Close the upper cover.**

6 OPTION (settings mode)

6.1 COPIER/PRINTER

The COPIER/PRINTER>OPTION screen and its items are as follows:



F00-601-01

<BODY>

Use it to make selections related to the machine.

CONTRAST	
	Use it to switch between auto and manual for the target contrast potential.
Settings	**0: Auto, 1 to 8: Manual [Default: 0]**
MODEL-SZ	
	Use it to select the appropriate paper series.
Settings	**0: AB (6R5E), 1: INCH (5R4E), 2: A (3R3E), 3: AB/INCH (6R5E)**
PASCAL	
	Use it to enable/disable the gradation correction data and contrast potential obtained by auto gradation correction.
Settings	**0: Disable, 1: Enable [Default: 1]**
Caution	For the printer model, be sure to set it to '0' at time of installation.

COPIER/PRINTER>OPTION

SENS-CNF	
	Use it to select the appropriate sensor series (arrangement).
Settings	**0: AB, 1: Inch, 2: A**
EC-GLASS	
	Use it to specify the presence/absence of an EC coating on the copyboard glass.
Settings	**0: EC coat absent, 1: EC coat present (default: 0 for 100-V model, 1 for other models)**
TBLT-ADJ	
	Use it to enable execution of displaced registration caused by uneven thickness of the transfer belt.
Settings	**0: Disable, 1: Enable [Default: 1]**
HS-SW	
	Use it to enable or disable the result of executing head shading.
Settings	**0: Disable, 1: Enable [Default: 1]**
F-WEB	
	Use it to change the frequency at which the web solenoid (SL4) turns on.
Settings	**0: Reference value, 50: Twice the reference value, 200: 1/2 the reference value [Default: 0]**
2S-RG-DT	
	Use it to enable or disable erasing of part of images falling outside paper as determined by the result of detection made by the side registration sensor (S32) when the duplex unit is used.
Settings	**0: Disable, 1: Enable [Default: 1]**
Reference	In printing mode, images are shifted to reflect the result of detection regardless of the setting made in this mode. (See 5.4 “Detecting the Position of Side Registration” in Chapter 6 of the Printer Manual.)

PG-CST	
	Use it to select the source of paper for a printer model in response to **TEST>PG-P.** • Execute **TEST>PG-P** after making a selection in this mode.
Settings	**[default: 1]** 1: Cassette 1, 2: cassette 2, 3: Cassette 3 (cassette pedestal)*, 4: Cassette 4 (cassette pedestal)*, 5: Side paper deck* 6 through 10: disable
Caution	* If no cassette pedestal is installed, the setting will be as follows: 3: Side paper deck, 4 through 10: Disable
Reference	In the case of the printer model, the control panel continues to show the Extension screen, not enabling the selection of a source of paper on its own as is possible with the copier model, requiring the use of this mode to make the selection.
PG-DLVR	
	Use it to select single-sided, double-sided, or face-down delivery for **TEST>PG-P** for a printer model. • Execute **TEST>PG-P** after making a selection in this mode.
Settings	**0: Single-sided, 1: Double-sided, 2: Face-down delivery [Default: 0]**
Reference	In the case of the printer model, the control panel continues to show the Extension screen, not enabling the selection of single-sided, double-sided, or face-down delivery on its own as is possible with the copier model, requiring the use of this mode to make the selection.
TR-TMG	
	Use it to set the timing at which the transfer high-voltage output is started for image transfer.
Settings	**0: Use the timing of output start set at the factory. (default; normally, keep the setting)** **1: Advance the timing of output start by 100 msec.**
Use	If the leading edge of paper becomes soiled with toner, set it to '1'.

COPIER/PRINTER>OPTION

DLIFE-Y/M/C/K

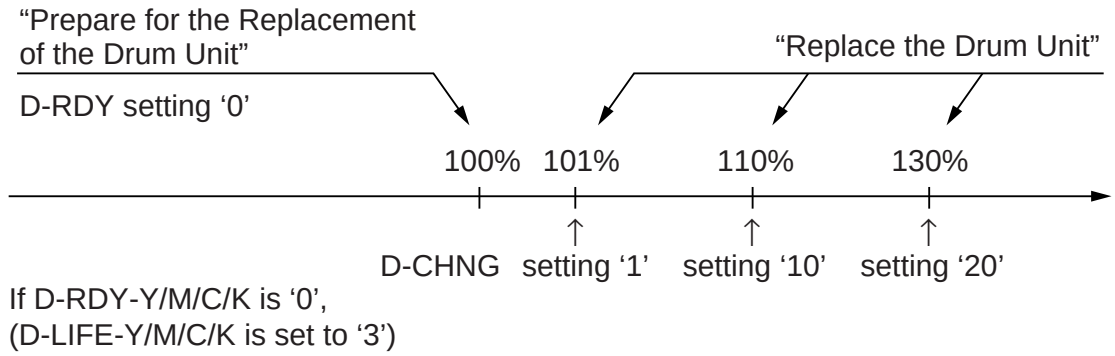
	Use it enable/disable the following messages: “Prepare for the Replacement of the Drum Unit” and “Replace the Drum Unit.”
Settings	**0: Disable the messages. (default)** **1: Enable only “Prepare for the Replacement of the Drum Unit.”** **2: Enable only “Replace the Drum Unit.”** **3: Enable both “Prepare for the Replacement of the Drum Unit” and “Replace the Drum Unit.”**
Use	0: Use it if you want to use the drum unit until it is exhausted without regard to the end of its life. In this case, the replacement of the drum unit is left to the decision of the user and, as a result, service calls for image faults will be likely. 1: It is the same as ‘0’; however, use it if you want the machine to at least tell the user when the drum unit reaches the end of its life. 2: Use it if you want the user to replace the drum unit as soon as it reaches the end of its life. It will force the machine to stop operation without a warning in advance. 3: It is the same as ‘2’; however, use it if you want the machine to warn the user, prompting him/her to replace the drum unit. When the message “Replace the Drum Unit” is indicated for the Y/M/C drum unit, the machine will not make color copies/prints; however, it can make copies/prints using black only.

D-RDY-Y/M/C/K

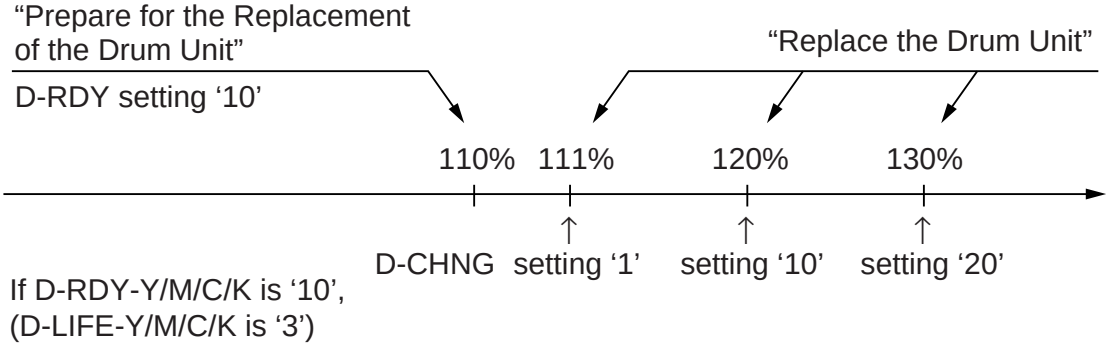
	Setting the Timing at Which “Prepare for the Replacement of the Drum Unit” is Indicated
Settings	**0 to 10 (default: 0)**
	An increase by ‘1’ made to the setting will delay the timing of indication in increments of 10% (wear index).
Use	When ‘0’ is set, the message will be indicated at 100% (wear index). [default]
	When ‘5’ is set, the message will be indicated at 150% (wear index).
	When ‘10’ is set, the message will be indicated at 200% (wear index).

D-CHNG-Y/M/C/K

	Setting the Timing at Which “Replace the Drum Unit” is Indicated
Settings	**1 to 20 (default: 20)**
	An increase by ‘1’ made to the setting will delay the timing of indication in increments of 1% (wear index) for “Prepare for the Replacement of the Drum Unit.”
Use	If we suppose that the message “Prepare for the Replacement of the Drum Unit” is to be indicated at 100% (wear index), the following will be true:
	If it is set to ‘1’, the message will be indicated at 101% (wear index).
	If it is set to ‘10’, the message will be indicated at 110% (wear index).
	If it is set to ‘20’, the message will be indicated at 120% (wear index). [default]



F00-601-02



F00-601-03

COPIER/PRINTER>OPTION

<USER>

Use it to make selections related to the user.

COPY-LIM	
	Use it to change the upper limit imposed on the copy count.
Setting	**1 to 999 sheets [Default: 999]**
SIZE-DET	
	Use it to enable or disable the original size detection mechanism.
Setting	**0: OFF, 1: ON [Default: 0]**
COUNTER1	
	Use it to set the soft counter 1 on the User Mode screen. (You may change the counter particulars to suit the needs of the user or the dealer.)
Setting	**0: Disable display, 1 to 999: as in T00-600-01** **[Default: as in 3 "Counters" in Chapter 8 of the Printer Manual.]**
Caution	In the case of the 100-V model, the selection cannot be made in the field.
COUNTER2	
	Use it to set the soft counter 2 on the User Mode screen. (You may change the counter particulars to suit the needs of the user or the dealer.)
Setting	**0: Disable display, 1 to 999: as in T00-600-01** **[Default: as in 3 "Counters" in Chapter 8 of the Printer Manual.]**
Caution	In the case of the 100-V model, the selection cannot be made in the field.
COUNTER3	
	Use it to set the soft counter 3 on the User Mode screen. (You may change the counter particulars to suit the needs of the user or the dealer.)
Setting	**0: Disable display, 1 to 999: as in T00-600-01** **[Default: as in 3 "Counters" in Chapter 8 of the Printer Manual.]**
Caution	In the case of the 100-V model, the selection cannot be made in the field.
COUNTER4	
	Use it to set the soft counter 4 on the User Mode screen. (You may change the counter particulars to suit the needs of the user or the dealer.)
Setting	**0: Disable display, 1 to 999: as in T00-600-01** **[Default: as in 3 "Counters" in Chapter 8 of the Printer Manual.]**
Caution	In the case of the 100-V model, the selection cannot be made in the field.

COUNTER5	
Setting	Use it to set the soft counter 5 on the User Mode screen. (You may change the counter particulars to suit the needs of the user or the dealer.) **0: Disable display, 1 to 999: as in T00-600-01** **[Default: as in 3 "Counters" in Chapter 8 of the Printer Manual.]**
COUNTER6	
Setting	Use it to set the soft counter 5 on the User Mode screen. (You may change the counter particulars to suit the needs of the user or the dealer.) **0: Disable display, 1 to 999: as in T00-600-01** **[Default: as in 3 "Counters" in Chapter 8 of the Printer Manual.]**

COPIER/PRINTER>OPTION
<Soft Counter Specifications>

The soft counters are grouped into the following according to input numbers:

100s: Total	500s: Scan
200s: Copy	600s: Box
300s: Print	700s: Reception print
400s: Copy + print	800s: Report print

Guide to the Table

- Y: Counter valid in the machine.
- 4C: Full color
- mono: Mono color (Y, M, C/R, G, B/sepia mono)
- Bk: Black mono
- L: Large-size (larger than B4)
- S: Small-size (smaller than B4)

Number under “Description,” i.e., 1 and 2: count of large-size sheet

In service mode (COPIER>OPTION>USER>B4_L_CNT), B4 and larger may be selected for counting as a large-size sheet.

Used	No.	Description	Used	No.	Description
Y	000	No indication	Y	201	Copy (Total 1)
Y	101	Total 1	Y	202	Copy (Total 2)
Y	102	Total 2	Y	203	Copy (L)
Y	103	Total (L)	Y	204	Copy (S)
Y	104	Total (S)		205	Copy A (Total 1)
Y	150	Total (4C1)		206	Copy A (Total 2)
Y	106	Total (4C2)		207	Copy A (Total)
Y	107	Total (Mono)		208	Copy A (S)
Y	108	Total (Bk1)		209	Local copy (Total 1)
Y	109	Total (Bk2)		210	Local copy (Total 2)
Y	110	Total (Mono/L)		211	Local copy (L)
Y	111	Total (Mono/S)		212	Local copy (S)
Y	112	Total (Bk/L)		213	Remote copy (Total 1)
Y	113	Total (Bk/S)		214	Remote copy (Total 2)
Y	114	Total (4C + Mono +Bk/Double-sided)		215	Remote copy (L)
		Total 1 (Double-sided)		216	Remote copy (S)
	115	Total 2 (Double-sided)	Y	217	Copy (4C1)
	116	L (Double-sided)	Y	218	Copy (4C2)
	117	S (Double-sided)			

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Used	No.	Description	Used	No.	Description
Y	219	Copy (Mono1)	Y	319	Print (Bk/L)
Y	220	Copy (Mono2)	Y	320	Print (Bk/S)
Y	221	Copy (Bk1)	Y	321	Print (4C + Mono/L)
Y	222	Copy (Bk2)	Y	322	Print (4C + Mono/S)
Y	223	Copy (4C/L)	Y	323	Print (4C + Mono/2)
Y	224	Copy (4C/S)	Y	324	Print (4C + Mono/1)
Y	225	Copy (Mono/L)	Y	325	Pint (4C/L/Double-sided)
Y	226	Copy (Mono/S)	Y	326	Print (4C/S/Double-sided)
Y	227	Copy (Bk/L)	Y	327	Print (Mono/L/Double-sided)
Y	228	Copy (Bk/S)	Y	328	Print (Mono/S/Double-sided)
Y	229	Copy (4C + Mono/L)	Y	329	Print (Bk/L/Double-sided)
Y	230	Copy (4C + Mono/S)	Y	330	Print (Bk/S/Double-sided)
Y	231	Copy (4C + Mono/2)		331	PDL Print (Total 1)
Y	232	Copy (4C + Mono/1)		332	PDL Print (Total 2)
Y	233	Copy (4C/L/Double-sided)		333	PDL print (L)
Y	234	Copy (4C/S/Double-sided)		334	PDL print (S)
Y	235	Copy (Mono/L/Double-sided)	Y	401	Copy + Print (4C/L)
Y	236	Copy (Mono/s/Double-sided)	Y	402	Copy + Print (4C/S)
Y	237	Copy (Bk/L/Double-sided)	Y	403	Copy + Print (Bk/L)
Y	238	Copy (Bk/s/Double-sided)	Y	404	Copy + Print (Bk/S)
Y	301	Print (Total 1)	Y	405	Copy + Print (Bk2)
Y	302	Print (Total 2)	Y	406	Copy + Print (Bk1)
Y	303	Print (L)	Y	407	Copy + Print (4C + Mono/L)
Y	304	Print (S)	Y	408	Copy + Print (4C + Mono/S)
	305	Print A (Total 1)	Y	409	Copy + Print (4C + Mono/2)
	306	Print A (Total 2)	Y	410	Copy + Print (4C + Mono/1)
	307	Print A (L)	Y	411	Copy + Print (L)
	308	Print A (S)	Y	412	Copy + Print (S)
Y	309	Print (4C1)	Y	413	Copy + Print (2)
Y	310	Print (RC2)	Y	414	Copy + Print (1)
Y	311	Print (Mono1)		501	Scan (Total)
Y	312	Print (Mono2)			Copy scan (Total/4)
Y	313	Print (Bk1)		502	Scan (Total 2)
Y	314	Print (Bk2)		503	Scan (L)
Y	315	Print (4C/L)			Copy scan (L/4)
Y	316	Print (4C/S)		504	Scan (S)
Y	317	Print (Mono/L)			Copy scan (S/4)
Y	318	Print (Mono/S)			

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COPIER/PRINTER>OPTION

Used	No.	Description	Used	No.	Description
Y	505	Bk scan (Total 1)		601	Box print (Total 1)
		Copy scan (Bk)		602	Box print (Total 2)
	506	Bk scan (Total 2)		603	Box print (L)
Y	507	Bk scan (L)		604	Box print (S)
		Copy scan (Bk/L)		701	Reception print (Total 1)
Y	508	Bk scan (S)		702	Reception print (Total 2)
		Copy scan (Bk/S)		703	Reception print (L)
Y	509	Color scan (Total)		704	Reception print (S)
		Copy scan (4C)		801	Report print (Total 1)
	510	Color scan (Total 2)		802	Report print (Total 2)
Y	511	Color scan (L)		803	Report print (L)
		Copy scan (4C/L)		804	Report print (S)
Y	512	Color scan (S)			
		Copy scan (4C/S)			
Y	513	Copy scan (L)			
Y	514	Copy scan (S)			
Y	515	Copy scan (Total)			

T00-600-01c

CONTROL

Use it to allow copying, printing, or scanning operation without the following input (with conditions):

- Control key (when the reader unit is connected)
- Card (when the Control Card-IV is connected)
- ID No. (when an ID No. is set)

Setting

0 to 444 [default: 222]

(The setting of each digit must be 0 to 4; if 0, operation even with a condition will not be allowed.)

Setting particulars

<Digit Setting and Operation Enabled>

1st digit: Absence of control key

2nd digit: Absence of card

3rd digit: Absence of ID No. input

Digit setting	B&W copy	Color copy	B&W print	Color print	scan
0	N	N	N	N	N
1	N	N	N	N	N
2	N	N	Y	Y	N
3	Y	N	N	N	N
4	Y	N	Y	Y	N

Y: Enabled. N: Disabled.

T00-600-03

EX 1 If the setting is '2',

Control key absent: Enables B&W printing/color printing

Card absent: No operation enabled

ID No. input absent: No operation enabled

EX 2 If the setting is '431',

Control key absent: No operation enabled

Card absent: B&W copying enabled

ID No. input absent: B&W coping, B&W printing/color printing enabled

Caution

<Count When operation Is Enabled with Conditions>

Counter type	Control key OFF	Card absent	ID No. absent
On user Mode screen	○	○	○
Card	○	△	○
ID NO.	○	○	×

○: Counts all. △: Counts some. ×: Counts none.

T00-600-03

COPIER/PRINTER>OPTION

	Guide to Table a. Counter on the User Mode • A count is made regardless of the setting (with conditions). b. Card Counter When the Control Card-IV is connected, • If the setting for the absence of a card (2nd digit) is '3,4', no count is made regardless of the presence/absence of a card in black-and-white copying mode. • If the setting for the absence of a card (2nd digit) is '2,4', no count is made regardless of the presence/absence of a card in black-and-white printing/color printing. When the Card Reader-B1 is connected, • If the setting or the absence of a card (2nd digit) is '3,4', no count is made in the absence of a card in black-and-white copying mode. • In black-and-white printing/color printing mode, no count is made regardless of the setting (w/ conditions). However, the OA counter inside the Copy Data Controller-A1 makes a count regardless of the setting (w/ conditions). c. ID No. Counter • If the setting for the absence of an ID No. input (3rd digit) is '3,4', no count is made regardless of the presence/absence of an ID No. in black-and-white copying mode. • If the setting for the absence of an ID No. input (3rd digit) is '2,4', no count is made regardless of the presence/absence of an ID No. input in black-and-white printing/color printing.
HS-DISP	
	Use it to enable or disable the indication of the execution key for head shading in user mode.
Setting	**0: Disable indication, 1: Enable indication [Default: 0]**
B-BK-DSP	
	Use it to enable or disable the indication of the blue-back correction key on the User Mode screen. If ghost images occur, a press on the blue-back correction key on the User Mode screen will reduce the amount of LED exposure to limit ghosting (however, the drum charging potential will increase to maintain solid density).
Setting	**0: Disable, 1: Enable [Default: 0]**

B-BK-LVL	Use it to set the level of blue-back correction (OPTION>USER>B-BK-DSP). If ghosting does not decrease after executing blue-back correction, set this mode item to '1'. (Before doing so, however, check to make sure that the absolute humidity inside the machine is 2.9 g or higher, indicated under DISPLAY>ANALOG>ABS-HUM.)
Caution	Executing this mode item can cause the following; take note: • The amount of LED exposure tends to be uneven (especially in high-density areas). • The density may fall short of expected levels (at a machine inside absolute humidity of 2.9 g, the density will more likely be lower than expected, i.e., images will be lighter). • The gradation characteristics may change.
Setting	**[Default: 0]** 0: Do not change. 1: Decrease exposure, increase DC component of injection charging bias, and increase DC component of developing bias.

COPIER/PRINTER>OPTION

<ACC>

Use it to make selections related to accessories.

DK-P	
	Use it to select a paper size for the paper deck.
Setting	**0: A4, 1: B5, 2: LTR [Default: 0]**
HDNS-SW	
	Use it to enable/disable the indication of a staple alarm (prohibiting stacking) during sorter high-density image processing.
Setting	**0: Disable, 1: Enable [Default: 0]**
DF-SET	
	Use it to set DF auto count and original re-placement alarm indication for limitless sorting. Note: If '1' or '2' is set, auto start will turn on when all delivered sheets are removed in limitless sorting.
Setting	**0: Require re-placement, 1: issue re-placement alarm (at end of original count), 2: Enable operation without indication [Default: 0]**
STOV-SW	
	Use it to set how overstacking should be detected.
Setting	**0: by height + count, 1: by height only [Default: 0]**
SHFT-SW	
	Use it to specify whether sheets should be delivered by shifting by one (the first of a set of sheets) in shift mode or group mode.
Setting	**0: Shift, 1: Do not shift [Default: 0]**

<INT-FACE>

Setting Conditions (when an external controller is connected)

B-CLR	
	When Releasing the Copy Data Controller-A1 After Installation
Settings	**0: Not connected** **1: Connected**
Use	If you want to temporarily release the Copy Data Controller-A1 at time of servicing work, set ‘0’.
Reference	When a Copy Data Controller-A1 is installed, the setting will automatically be ‘1’; if the controller is release without setting ‘0’ to it, the machine will indicate error code E717.

FEEDER/SORTER>OPTION

6.2 FEEDER

The following items are found under FEEDER>OPTION.

SIZE-SW	
	Use it to enable or disable detection of the presence of both AB-series and Inch-series originals.
Setting	**0: Disable, 1: Enable [Default: 0]**

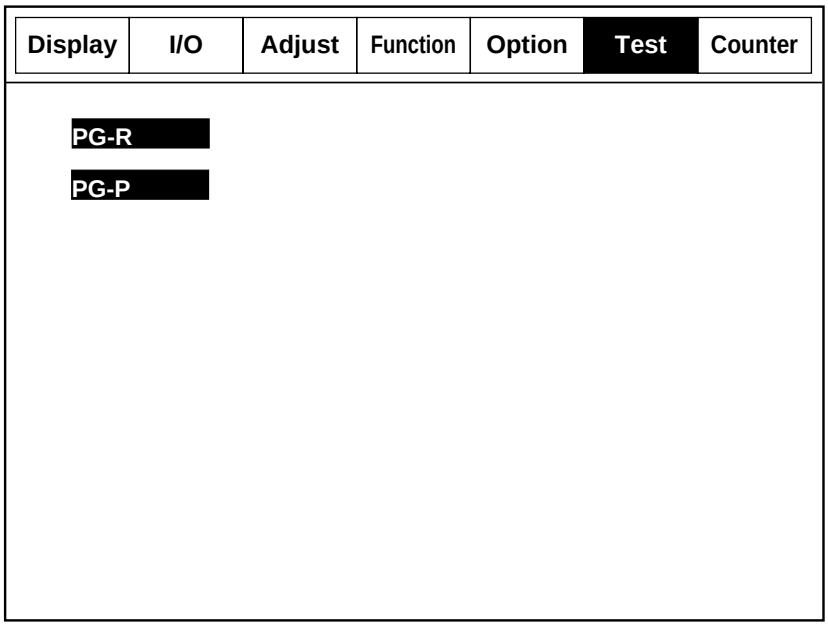
6.3 SORTER

The following items are found under SORTER>OPTION.

T-ADJ-SW	
	Use it to enable or disable corrective processing when delivering transparencies in relation to the detection of the height of sheets on the finisher tray.
Setting	**0: Disable, 1: Enable [Default: 0]**

7 TEST (test print mode)

The COPIER/PRINTER>TEST screen and its items are as follows:



F00-700-01

COPIER>TEST

<PG-R>

Use it to generat reader-related test prints.

TYPE	
	Enter the type No. of the test print you want, and press the Start key to generate a test print. (Be sure to put the setting back to '0' after printing a test print.)
Settings	**0: Normal printing, 1 to 99: T00-700-01**
THRU	
	Use it to enable or disable the LUT mechanism for test printing.
Settings	**0: Enable, 1: Disable**
DENS-Y, DENS-M, DENS-C, DENS-K	
	Use it to adjust the density of each color for test printing (TYPE=5).
Settings	**0 to 255: A higher value causes images to be darker.**
COLOR-Y, COLOR-M, COLOR-C, COLOR-K	
	Use it to enable output of each color for each TYPE; for example, to generate a M mono test print, set COLOR-M to '1', and others to '0'. (Only one color is available at a time.)
Settings	**0: Disable output, 1: Enable output**
F/M-SW	
	Use it to switch between full color and mono color for the PG-R output; in mono color mode, use it to select the color in relation to COLOR-Y, -M, -C, and -K.
Settings	**0: Full color output, 1: Mono color output**
HS-THRU	
	Use it to enable or disable the result of HAS for the PG-R images.
Settings	**0: Enable, 1: Disable**

- Guide to PG-R>TYPE Input No./Test Print

No.	Description	No.	Description
0	Image from CCD (normal printing)	9	For R&D
1	For R&D	10	YMCBk horizontal stripes (laser FF activation)
2	256 colors	11	For R&D
3	256 gradations	12	YMCBk 64 gradations
4	16 gradations (17 gradations)	13	RGB 64 gradations
5	Full halftone	14	Full color 16 gradations (17 gradations)
6	Grid	15	Full color light area 16 gradations (17 grada tions)
7	Image position correction control pattern	16	YMCBk horizontal stripes (laser A0 activation)
8	For R&D	17 to 99	For R&D

T00-700-01

<PG-P>

Use it to generate test prints related to the printer unit.

TYPE	
	Use it to generate a test print by entering its type No. and pressing the Start key.
Settings	**0 to 32: T00-700-02**
THRU	
	Not used.
DENS-Y, DENS-M, DENS-C, DENS-K	
	Use it to adjust density of each color for test printing (TYPE=05).
Settings	**0 to 255: A higher setting makes images darker.**
COLOR-Y, COLOR-M, COLOR-C, COLOR-K	
	Use it to enable or disable the output of each color for each TYPE; for example, to generate a test print in M mono, set COLOR-M to ‘1’ and others to ‘0’. (Only one color is available at a time.)
Settings	**0: Disable output, 1: Enable output**
F/M-SW	
	Not used.

COPIER>TEST

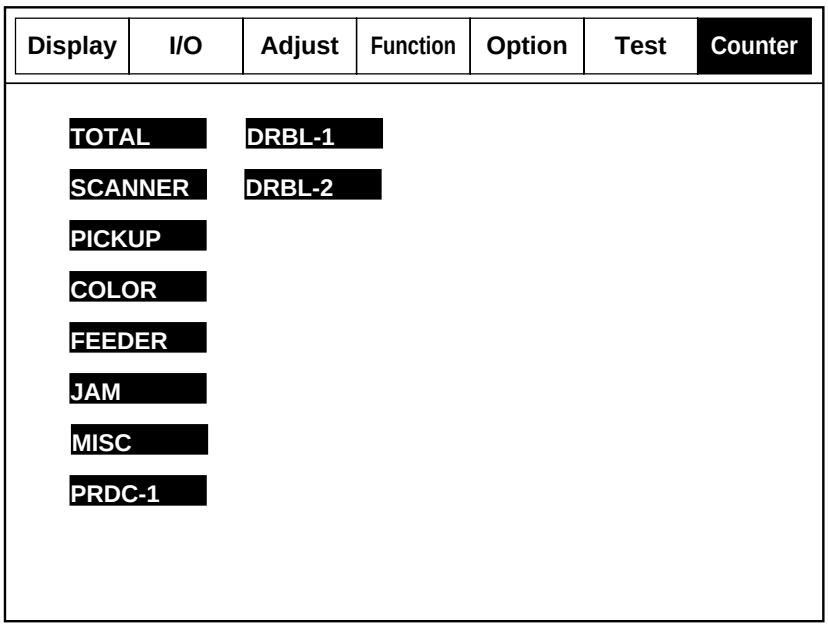
- PG-P>TYPE Input No./Test Print

No.	Description	No.	Description
1 to 3	For R&D	12 to 13	For R&D
4	16 gradations (sub scanning direction)	14	7 colors (sub scanning direction)
5	Halftone	15 to 18	For R&D
6	Grid	19	Grid in each color (main scanning direction)
7 to 9	For R&D	20 to 23	For R&D
10	MCYBk stripe (sub scanning direction)	24	Grid in each color (sub scanning direction)
11	16 gradations (main scanning direction)	25 to 32	For R&D

T00-700-02

8 COUNTER (counter mode)

The COPIER>COUNTER screen and its items are as follows:



F00-800-01

• This mode indicates the number of times the machine has operated.

<Resetting the Counter Reading>

1) Select the item to reset so that it is highlighted.
2) Press the Clear key on the control panel.
   The reading will be reset to '00000000'.

<Size Classification>

TOTAL/PICKUP/FEEDER

L: Larger than B4
S: Smaller than B4

PRDC-1/DRBL-1/DRBL-2

L: Longer than 324 mm in feeding direction
S: Shorter than 324 mm in feeding direction

COPIER>COUNTER

<Guide to Counters for Periodically Replaced Parts/Consumablse>

The machine is equipped with counters for periodically replaced parts/consumables (DRBL-1/DRBL-2/PRDC-1), providing guides when scheduling replacement.

EX

C1-PU-RL / 00098400 / 00120000 / 82% !! 000027
[1] [2] [3] [4] [5] [6]

[1] Indicates a part name; in the case of the example, the notation points to a primary charging wire.
[2] Indicates the counter reading (actual number of sheets); press the Clear key to reset the reading after replacement of the part.
[3] Indicates the limit (recommended number of sheets at replacement); it may be changed by selecting the item and entering a number on the keypad.
[4] Indicates the ratio of counter reading to limit.
[5] Indicates an exclamation symbol (!) when the above ratio is from 90% to 100% or two exclamation symbols when the ratio is 100% or higher.
[6] Indicates the date of expected replacement (days); in the case of the example, 27 days later.

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List of Items under COUNTER

Setting	Mode description
Level 1: COUNTER	
Level 2: TOTAL	
Level 3: SERVICE1	Total counter 1 for servicing
SERVICE2	Total counter 2 for servicing
TTL	Total counter for copy + print
L-TTL	Total counter for copy + print (L size)
S-TTL	Total counter for copy + print (S size)
C-L-TTL	Total counter for YMC copy + print (L size)
C-S-TTL	Total counter for YMC copy + print (S size)
K-L-TTL	Total counter for Bk copy + print (L size)
K-S-TTL	Total country for Bk copy + print (S size)
COPY	Total counter for copy
L-COPY	Total counter for copy (L size)
S-COPY	Total counter for copy (S size)
C-L-COPY	Total counter for YMC copy (L size)
C-S-COPY	Total counter for YMC copy (S size)
K-L-COPY	Total counter for Bk copy (L size)
K-S-COPY	Total counter for Bk copy (S size)
PRNT	Total counter for print
L-PRNT	Total counter for print (L size)
S-PRNT	Total counter for print (S size)
C-L-PRNT	Total counter for YMC print (L size)
C-S-PRNT	Total counter for YMNC print (S size)
K-L-PRNT	Total counter for Bk print (L size)
K-S-PRNT	Total counter for Bk print (S size)
4C-TTL	Total counter for full color (4 colors) copy
Y-COPY	Counter for Y mono copy
M-COPY	Counter for M mono copy
C-COPY	Counter for C mono copy
K-COPY	Counter for Bk mono copy
Level 2: SCANNER	
Level 3: SC-TTL	Total counter for scan by scanner
SC-COPY	Counter for copy scan
Level 2: PICKUP	
Level 3: C1	Total counter for pickup from cassette 1
L-C1	Total counter for pickup from cassette 1 (L size)
S-C1	Total counter for pickup from cassette 1 (S size)
C2	Total counter for pickup from cassette 2
L-C2	Total counter for pickup from cassette 2 (L size)
S-C2	Total counter for pickup from cassette 2 (S side)

COPIER>COUNTER

	C3	Total counter for pickup from cassette 3
	L-C3	Total counter for pickup from cassette 3 (L size)
	S-C3	Total counter for pickup from cassette 3 (S size)
	C4	Total counter for pickup from cassette 4
	L-C4	Total counter for pickup from cassette 4 (L size)
	S-C4	Total counter for pickup from cassette 4 (S size)
	MF	Total counter for pickup from manual feed tray
	L-MF	Total counter for pickup from manual feed tray (L size)
	S-MF	Total counter from pickup from manual feed tray (S size)
	DK	Total counter from pickup from paper deck
	L-DK	Total counter form pickup from paper deck (L size)
	S-DK	Total counter for pickup from paper deck (S size)
	2-SIDE	Total counter for pickup of 2nd side of double-sided sheet
	L-2-SIDE	Total counter for pickup of 2nd side of double-sided sheet (L size)
	S-2-SIDE	Total counter for pickup of 2nd side of double-sided sheet (S size)
Level 2: COLOR		
Level 3:	Y-DEV	Number of times Y developing assembly is used (locked)
	M-DEV	Number of times M developing assembly is used (locked)
	C-DEV	Number of times C developing assembly is used (locked)
	K-DEV	Number of times Bk developing assembly is used (locked)
Level 2: FEEDER		
Level 3:	FEED	Total counter for pickup of originals by feeder
	L-FEED	Total counter for pickup of originals by feeder (L size)
	S-FEED	Total counter for pickup of originals by feeder (S size)
Level 2: JAM		
Level 3:	TOTAL	Total number of jams in machine
	PRINT	Total number of print jams
	FEEDER	Total number of jams in feeder
	SORTER	Total number of jams in sorter
Level 2: MISC		
Level 3:	TORALPWR	Total time of use of power
	FIX-WEB	Counter for fixing web (initially, ‘0’; in excess of ‘300’, E500 is issued); indicates the number of times the web is pulled while the web length sensor (S24) detects the absence of the web)
Level 2: PRDC-1		
Level 3:	AR-FIL6	Number of sheets passing through air filter (FM6) (unit: sheets)

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Level 2: DRBL-1

Level 3:	SCN-LMP	Length of time for activation of scanning lamp (LA1)	(unit: sec)
	SP-UNIT	Number of sheets passing through separation charging assembly (2 counts for L size)	(unit: sheets)
	BLT-B-CN	Number of sheets passing through belt back scraper (2 counts for L size)	(unit: sheets)
	T-CLN-BD	Number of sheets passing through transfer leaning blade (2 counts for L size)	(unit: sheets)
	T-CN-BRU	Number of sheets passing through transfer cleaner brush (2 counts for L size)	(unit: sheets)
	TR-BLD-Y	Number of sheets passing through transfer blade unit Y (2 counts for L size)	(unit: sheets)
	TR-BLD-M	Number of sheets passing through transfer blade unit M (2 counts for L size)	(unit: sheets)
	TR-BLD-C	Number of sheets passing through transfer blade unit C (2 counts for L size)	(unit: sheets)
	TR-BLD-K	Number of sheets passing through transfer blade unit Bk (2 counts for L size)	(unit: sheets)
	SB-FD-RL	Number of sheets passing through feeding auxiliary roller scraper (2 counts for L size)	(unit: sheets)
	TR-BLT	Number of sheets passing through transfer belt (2 counts for L size)	(unit: sheets)
	C1-PU-RL	Number of sheets passing through cassette 1 pickup roller	(unit: sheets)
	C1-SP-RL	Number of sheets passing through cassette 1 separation roller	(unit: sheets)
	C1-FD-RL	Number of sheets passing through cassette 1 feeding roller	(unit: sheets)
	C2-PU-RL	Number of sheets passing through cassette 2 pickup roller	(unit: sheets)

COPIER>COUNTER

C2-SP-RL	Number of sheets passing through cassette 2 separation roller	(unit: sheets)
C2-FD-RL	Number of sheets passing through cassette 2 feeding roller	(unit: sheets)
M-SP-RL	Number of sheets passing through manual feed separation roller	(unit: sheets)
M-FD-RL	Number of sheets passing through manual feed pickup roller	(unit: sheets)
FX-UP-RL	Number of sheets passing through fixing upper roller (2 counts for L size)	(unit: sheets)
FX-LW-RL	Number of sheets passing through fixing lower roller (2 counts for L size)	(unit: sheets)
FHTR-M	Number of sheets passing through fixing main heater (H1) (2 counts for L size)	(unit: sheets)
FHTR-S	Number of sheets passing through fixing sub heater (H1) (2 counts for L size)	(unit: sheets)
FIX-WEB	Number of times fixing web is pulled (in excess of about 186,000, E005 will be indicated)	(unit: times)
FIX-TH1	Number of sheets passing through main thermistor (TH1) (2 counts for L size)	(unit: sheets)
FIX-TH2	Number of sheets passing through sub thermistor (TH2) (2 counts for L size)	(unit: sheets)
FX-TSW	Number of sheets passing through fixing thermal switch (TP1) (2 counts for L size)	(unit: sheets)
DLV-LCLW	Number of sheets passing through fixing separation claw (2 counts for L size)	(unit: sheets)
WST-TNR	Number of sheets passing through waste toner box (2 counts for L size)	(unit: sheets)

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Level 2: DRBL-2

Level 3:	DF-PU-RL	Number of pickups by ADF pickup roller	(unit: sheets)
	DF-FLP-F	Number of pickups by ADF flapper (front)	(unit: sheets)
	DF-FLP-R	Number of pickups by ADF flapper (rear)	(unit: sheets)
	DF-RBT-L	Number of pickups by ADF feeding roller belt (large)	(unit: sheets)
	DF-RBT-S	Number of pickups by ADF feeding roller belt (small)	(unit: sheets)
	DF-SP-BL	Number of pickups by ADF separation belt	(unit: sheets)
	DF-F-BLT	Number of pickups by ADF feeding belt	(unit: sheets)
	PD-PU-RL	Number of sheets passing through deck pickup roller	(unit: sheets)
	PD-FD-RL	Number of sheets passing through deck pickup/feeding roller	(unit: sheets)
	C3-PU-RL	Number of sheets passing through cassette 3 pickup roller	(unit: sheets)
	C3-SP-RL	Number of sheets passing through cassette 3 separation roller	(unit: sheets)
	C3-FD-RL	Number of sheets passing through cassette 3 feeding roller	(unit: sheets)
	C4-PU-RL	Number of sheets passing through cassette 4 pickup roller	(unit: sheets)
	C4-SP-RL	Number of sheets passing through cassette 4 separation roller	(unit: sheets)
	C4-FD-RL	Number of sheets passing through cassette 4 feed roller	(unit: sheets)
	FIN-STPR	Number of stapling operations	(unit: sheets)
	FIN-FDBL	Number of sheets passing through finisher feeding belt	(unit: sheets)
	FIN-PDDL	Number of sheets passing through finisher paddle	(unit: sheets)
	SDL-STPL	Number of stitcher operations	(unit: sheets)
	STR-STPL	Number of stapling operations by stapler sorter	(unit: sheets)

Error Code

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1 Self Diagnosis (copier)

The R-CPU and DC-CPU of the machine's CPU PCB are equipped with a mechanism to check the machine's state (particularly, sensors). It runs a check as needed and, upon detection of a fault, indicates a code on the control panel.

What follows below are lists of error codes and descriptions of faults and conditions of detection; the detail codes indicated under each error code are indicated in service mode: COPIER>DISPLAY>JAM>ERR.

E000

Main cause

The fixing heater is faulty. The SSR is faulty. The fixing thermistor is faulty. The DC controller PCB is faulty. The system controller PCB is faulty.

Condition of detection

xx=01: Main thermistor (TH1), xx=02: Sub thermistor (TH2)

- xx01 The thermistor (TH1, TH2) has detected 245°C or higher (hardware detection).
- 0002 The thermistor (TH1) has detected 240°C or higher (software detection).

Main cause

The fixing heater is faulty. The SSR is faulty. The fixing thermistor is faulty. The thermistor (TH1, TH2) has an open circuit. The thermal switch (TP1) has turned on.

Condition of detection

xx=01: Main thermistor (TH1), xx=02: Sub thermistor (TH2)

- xx03 The thermistor (TH1, TH2) has detected an open circuit.
- 0021 Within a temperature range of 50°C or lower as detected by the thermistor (TH1), the increase in temperature in 1 min is less than 3°C.
- 0031 Within a temperature range between 50°C and 190°C as detected by the thermistor, the increase in temperature within 30 sec is less than 5°C.
- 0040 During standby, the fixing temperature has dropped below 140°C.
- 0050 During printing, the fixing temperature has dropped below 140°C.

E004

Main cause

The SSR1 is faulty.

Condition of detection

xx=01: Main heater (H1), xx=02: Sub heater (H2)

- xx01 SSR1 for the fixing heater is ON even though the fixing heater (H1, H2) is OFF.

E005

Main cause: The fixing web has run out. The fixing web length sensor (S24) is faulty.

Condition of detection:

The web solenoid (SL4) has turned on 300 times after the fixing web length sensor (S24) stopped detecting the flag.

E006

Main cause: The fixing drawer has poor contact. The fixing assembly is absent.

Condition of detection:

0001 The fixing drawer cannot be detected even though the 24-V door is closed.

E010

Main cause: The main motor drive system has an excess load. The pickup main motor (M2)/delivery main motor (M16)/pedestal main motor (M19) is faulty. The serial driver PCB is faulty. The DC controller PCB is faulty.

Condition of detection:

0001 The pickup main motor (M2) is released.
The motor is checked every 10 msec from 3000 msec after it is started to when it is stopped. However, detection is not made when the front cover/delivery assembly cover/face-down delivery unit is released or when there is a fault in the power supply system.

0002 The pedestal main motor (M16) is released.
The motor is checked every 10 msec from 3000 msec after it is started to when it is stopped. However, detection is not made when the front cover/delivery assembly cover/face-down delivery unit is released or when there is a fault in the power supply system.

0003 The pedestal main motor (M19) is released.
The motor is checked every 10 msec from 2000 msec after it is started to when it is stopped. However, detection is not made when the front cover/delivery assembly cover/face-down delivery unit is released or when there is a fault in the power supply system.

E012

Main cause

The drum motor (M3, M4, M5, M6) is faulty. The drum motor drive system has an excess load. The DC controller PCB is faulty.

Condition of detection

XX=01: Y, XX=02: M, XX=03: C, XX=04: Bk (XX indicates the developing assembly color)

- XX01 The target speed cannot be attained even when the frequency of the motor drive pulse is increased to the upper limit.
- XX02 The target speed cannot be attained even when the frequency of the motor drive pulse is decreased to the lower limit.
- XX03 The encoder signal from the motor is not generated for the following period of time:
  standard: 3.69 msec, 1/2 speed: 7.38 msec, 1/4 speed: 14.75 msec
- XX04 The motor rotates in the direction opposite the desired direction.
- XX05 The spatial displacement is not corrected even when the frequency of the motor drive pulse is varied.
- XX06 The target speed cannot be attained even when the frequency of the motor drive pulse is varied.
- XX07 Not used.
- XX08 Not used.
- XX09 An error has occurred in the communication with the DC controller PCB.

E013

Main cause

The waste toner feedscrew has locked. The waste toner feed motor is faulty. The transfer high-voltage PCB is faulty. The serial driver PCB is faulty. The DC controller PCB is faulty.

Condition of detection

- 0001 The waste toner motor has locked and, as a result, an over-current has flowed into the motor control circuit.
- 0002 An open circuit has occurred in the waste toner motor.

E014

Main cause

The belt motor (M15) is faulty. The belt motor drive system has an excess load. The drum drive AC generation PCB is faulty. The transfer drive AC generation PCB is faulty. The DC controller PCB is faulty.

Condition of detection

- 0001 The target speed cannot be attained even when the frequency of the motor drive pulse is increased to the upper limit.
- 0002 The target speed cannot be attained even when the frequency of the motor drive pulse is decreased to the lower limit.
- 0003 The encoder signal is not generated by the motor.
- 0004 The motor rotates in the direction opposite the desired direction.
- 0005 Not used.
- 0006 The target speed cannot be attained even when the frequency of the motor drive pulse is changed.
- 0007 Not used.
- 0008 Not used.
- 0009 An error has occurred in the communication with the DC controller PCB.

E020

Main cause

The ATR sensor connector is disconnected. The developing cylinder/stirring screw fails to rotate.

Condition of detection

XX=01: Y, XX=02: M, XX=03: C, XX=04: Bk (XX indicates the developing assembly color)

- XXA0 During printing sequence, the difference between the maximum value and the minimum value of SIGNAL (9 samplings) is 0.2 V (10) or less.

Main cause

The RAM data inside the drum unit is faulty.

Condition of detection

XX=01: Y, XX=02: M, XX=03: C, XX=04: Bk (XX indicates the developing assembly color)

- XX80 During printing sequence, the value of INIT-SIGNAL entered as part of initial settings has dropped to 2.344 V (120) or lower.
- XX81 During printing sequence, the value of INIT-SIGNAL entered as part of initial settings has risen to 2.656 V (136) or higher.
- XX90 During printing sequence, the correction value for INIT-SIGNAL has changed to 0 (in service mode, ADJUST>DENS>SIGG-Y/M/C/K).

	XX91 During printing sequence, the correction value for INIT-SIGNAL has changed to 255 (in service mode, ADJUST>DENS>SIGG-Y/M/C/K).
Main cause	The ATR sensor is faulty. The toner level sensor is faulty. The toner supply system for the developing assembly is faulty. The developer has deteriorated or has a mixing of injection carrier.
Condition of detection	XX=01: Y, XX=02: M, XX=03: C, XX=04: Bk (XX indicates the developing assembly color) XXB0 During printing sequence, the value of SIGNAL obtained by sampling and averaging is 0.43 V (22) or lower. XXB1 During printing sequence, the value of SIGNAL obtained by sampling and averaging is 4.9 V (250) or higher. XXD0 During printing sequence, the value of SIGNAL remains higher than INIT-SIGNAL entered as part of initial settings by 4.71 V (240) or more continuously for 10 prints. XXE0 During printing sequence, the value of SIGNAL remains lower than INIT-SIGNAL entered as part of initial settings by 0.98 V (50) or more continuously for 10 prints.

E025

Main cause	The cartridge motor is faulty.
Condition of detection	0101 The cartridge motor Y (M11) is found to have an over-current condition. 0201 The cartridge motor M (M12) is fount to have an over-current condition. 0301 The cartridge motor C (M13) is found to have an over-current condition. 0401 The cartridge motor Bk (M14) is found to have an over-current condition.

E032

Main cause	The Copy Data Controller-A1 or the NE controller is faulty or has an open circuit. The system controller PCB is faulty.
Condition of detection	The Copy Data Controller-A1 or NE controller counter mechanism fails to operate.

E041

Main cause

The deck lifter motor (M102) is faulty. The deck driver PCB is faulty. A connected device is faulty. The deck lifter position sensor (PS104) is faulty. The deck paper sensor (PS107) is faulty.

Condition of detection

0001 The fault was detected while the lifter was moving up.
0002 The fault was detected while the lifter was moving down.
The deck lifter position sensor (PS104) does not detect the lifter within 60 sec after the deck lifter UP signal is generated.
The output of the deck paper sensor (PS107) is '0' when the output of the deck lifter position sensor (PS104) and that of the deck paper level sensor (PS108) are '1'.

E043

Main cause

The deck main motor (M101) is faulty. The deck driver PCB is faulty. A connected device is faulty.

Condition of detection

The PLL lock signal (DMPLK) remains '1' for 2 sec or more after the deck main motor drive signal is generated.

E051

Main cause

The side registration sensor (S32) is faulty. The side registration motor (M17) is faulty. The duplex driver PCB is faulty. The DC controller PCB is faulty.

Condition of detection

0001 The home position of the side registration sensor (S32) cannot be detected.
The home position cannot be detected when 24-V power is turned on in response to the turning on of the main power switch or the opening and closing of the front cover/delivery assembly cover/face-down delivery unit.

E070

Main cause

The transfer belt sensor (S51) is faulty. The transfer belt is deformed. The transfer high-voltage PCB is faulty. The DC controller PCB is faulty.

Condition of detection

0001 The transfer belt sensor (S51) cannot detect the home position of the transfer belt.
0002 The transfer belt sensor (S51) continues to detect the home position for the transfer belt.

E073

Main cause

The transfer drawer connector has poor contact. The transfer unit is absent.

Condition of detection

0001 The transfer unit cannot be detected when the front door is closed.

E074

Main cause

The transfer swing sensor (S49, S50) is faulty. The transfer swing clutch (CL23) is faulty. The pickup main motor (M1) is faulty. The serial driver PCB is faulty.

Condition of detection

0001 The output of the transfer swing sensor (S49, S50) does not change even when the transfer unit is swung.

E196

Main cause

A memory error has occurred in the EEPROM.

Condition of detection

X=01: Y, X=02: M, X=03: C, X=04: Bk (X indicates the developing assembly color)
YY=AA, 55, 00 (data in the presence of an error)
9XYY Drum kit cartridge EEPROM check error
A101 System controller PCB DIMM (absent)
A102 System controller PCB memory type (not SDRAM)
A103 System controller PCB memory sequential error
A104 System controller PCB memory capacity error (including a mix of 64 M and 128 M)
A105 System controller PCB memory type (not of recommended type)
A106 System controller PCB memory capacity error (duplex model, inadequate memory)
A2ZZ RCON

E197

Main cause

An error has occurred in communication among PCBs within the printer unit.

Condition of detection

X=0: System controller PCB side
2: DC controller PCB side

- Ex01 Serial reception error (during data reception)
- Ex02 Reset on CPU of other party (during data reception)
- Ex03 During processing of transmission/reception data (during data reception)
- Ex04 Serial reception error (during standby)
- Ex05 Reset on CPU of other party (during standby)
- Ex06 During processing of transmission /reception data (during standby)
- 020F Connection time-out

E202

Main cause

The mirror base malfunctions.

Condition of detection

During a home position search, the mirror base does not return to the home position within a specific period of time.

E203

Main cause

The scanner motor malfunctions.

Condition of detection

After scanning an original, the mirror mount does not return to the home position within a specific period of time.
The home position is detected while the mirror base is moving.

E211

Main cause

The scanning lamp thermistor has an open circuit.

Condition of detection

The thermistor reading is 0°C while the temperature is controlled to 70°C.

E215

Main cause

The scanning lamp thermistor has an open circuit.

Condition of detection

The thermistor reading is 170°C or higher.

E216	
Main cause	The scanning lamp is faulty. The light intensity sensor is faulty.
Condition of detection	The intensity sensor does not detect light 10 sec after the scanning lamp is turned on.
E217	
Main cause	The scanning lamp heater is faulty.
Condition of detection	The temperature reading is not 70°C or higher 3 min after control to 70°C is started.
E218	
Main cause	The scanning lamp is not mounted. The filament is broken.
Condition of detection	The fluorescent lamp current does not flow within a specific period of time after the ON signal has been received.
E219	
Main cause	The scanning lamp has reached the end of its life.
Condition of detection	The thermistor reading is 150°C or higher while the scanning lamp is on.
E240	
Main cause	An error has occurred in the communication between CPUs of the reader controller PCB and the system controller PCB.
Condition of detection	An error has occurred in the communication between CPUs of the reader controller PCB and the system controller PCB.
E243	
Main cause	An error has occurred in the communication between CPUs of the reader controller PCB and the control panel.
Condition of detection	An error has occurred in the communication between CPUs of the reader controller PCB and the control panel.

E244

Main cause

The pickup assembly PCB is faulty. The serial driver PCB is faulty. The duplex driver PCB is faulty. The DC controller PCB is faulty.

Condition of detection

x=0: Pickup assembly PCB, 1: Serial driver PCB,
2: Duplex driver PCB
y=0 to 7: Port of each PCB

- xy01 Connection check error
  When the main power switch is turned on, communication with each PCB cannot be established.
- xy02 Parity error
  After communication with each PCB has been established, a parity error has occurred continuously 5 times.
- xy04 Sub station reset response time-out error
  When the main power switch is turned on, each PCB cannot be reset (reset processing error).
- xy05 Connection check result response time-out error
  When the main power switch is turned on, communication with each PCB cannot be established.
- xy06 Transmission end response time-out error
  After communication has been established with each PCB, the absence of responce has occurred continuously 5 times. (monitoring at tall times)

E351

Main cause

An error has occurred in the anti-counterfeit PCB.

Condition of detection

An error has occurred in the anti-counterfeit PCB.

E717

Main cause

The Copy Data Controller-A1 or the NE Controller is faulty or has an open circuit. The system controller PCB is faulty.

Condition of detection

When the copy start signal is generated, the count pulse is not detected by the Copier Controller-A1 or the NE controller within a specific period of time.
After connection, the Copy Data Controller-A1 or the NE Controller is disconnected.

E800

Main cause

The electric system has an error. The DC controller PCB is faulty.

Condition of detection

0001	The shut-off relay of the main power switch (SW1) is found to have an open circuit.
0002	The AC relay (RL1) is found to have an open circuit.
0003	The DC relay (RL2) is found to have an open circuit.
0004	+24 VRET does not change to +24 V even when the front door, fixing door, and face-down delivery unit are all closed.

E805

Main cause

The fixing fan has an error. The delivery fan has an error. The machine cooling fan has an error. The power supply cooling fan has an error. The de-curling fan has an error. The kit drive cooling fan has an error. The transfer motor cooling fan has an error.

Condition of detection

0001	The fixing fan (FM1) is found to have locked.
0002	The delivery fan (FM2) is found to have locked.
0003	The machine cooling fan (FM4) is found to have locked.
0004	The power supply cooling fan (FM6) is found to have locked.
0005	The de-curling fan (FM7) is found have locked.
0006	The kit drive cooling fan (FM10) is found to have locked.
0007	The transfer motor cooling fan (F13) is found to have locked.

E809	
Main cause	The reader unit power supply fan (FM1) is faulty.
Condition of detection	The reader unit power supply fan (FM1) is faulty.
E810	
Main cause	The photosensitive drum unit is faulty.
Condition of detection	XX=01: Y, XX=02: M, XX=03: C, XX=04: Bk (XX indicates the developing assembly color) XX01 The photosensitive drum unit is absent. XX02 The wrong photosensitive drum unit is mounted (wrong color). XX03 The photosensitive drum is wrongly installed (wrong country model).

1. If the self-diagnosis mechanism has turned on, the machine may be reset by turning its power switch off once; this, however, this does not apply to E000, E004, E005, E211, E215, E217, or E717. If any of these codes is indicated, perform the following:

   Clearing an Error
   1) Make the following selections in service mode: FUNCTION>CLEAR.
   2) Press <ERR> to highlight, and press the OK key.
   3) Turn off and then on the main power switch.
   4) See that the message panel on the control panel has been reset and now shows the Copy Mode screen.

2. In the case of E000 or E004, the machine will turn off in 20 sec after the error is detected.
3. The error history may be checked by making the following selections: Display>ERR.

2 Self Diagnosis O (DADF)

If the self-diagnosis mechanism has turned on, the machine may be reset by turning off and then on the host machine.
Even when the machine remains out of order, copies may still be made by opening it and placing originals on the copyboard glass.

E401	
Main cause	The pickup motor (M1) fails to rotate. The pickup roller sensor (S5) is faulty.
Condition of detection	The sensor does not turn on and off twice or more within 1 sec.
E402	
Main cause	The belt motor (M3) fails to rotate. The belt motor lock sensor (S10) is faulty.
Condition of detection	The number of clock pulses within 200 msec is lower than a specific value.
E404	
Main cause	The feed motor (M2) fails to rotate. The feed motor clock sensor (S9) is faulty.
Condition of detection	The number of clock pulses within 200 msec is lower than a specific value.
E411	
Main cause	The original tray power sensor (S1) is faulty. The registration sensor (S3) is faulty.
Condition of detection	In the absence of paper, the output of the sensor is 2.3 V or higher.
E621	
Main cause	The editor has an error.
Condition of detection	An error has been detected in the communication between editor and host machine.

E624	
Main cause	The editor has an error
Condition of detection	An error has occurred in the communication with the editor digitizer.
E625	
Main cause	The editor has an error.
Condition of detection	An error has occurred in the editor RAM.
E626	
Main cause	The editor has an error.
Condition of detection	An error has occurred in the LCD of the editor.
E627	
Main cause	The editor ha an error.
Condition of detection	An error has occurred in the ASIC of the editor.
E628	
Main cause	The editor has an error.
Condition of detection	An error has occurred in the IPC of the editor.
E629	
Main cause	The editor has an error.
Condition of detection	A sequential error has occurred in the editor.
E710	
Main cause	The DADF/editor IPC communication (initialization) has an error.
Condition of detection	At power-on, synchronization fails in the IPC communication between the reader unit and DADF/editor within a specific period of time (3 sec).

E711	
Main cause	The DADF/editor has an IPC communication error.
Condition of detection	At power-on, an IPC communication error has occurred 10 times or more between the reader unit and DADF/editor within a specific period of time (1.5 sec).
E712	
Main cause	The DADF/editor has an IPC communication error.
Condition of detection	The IPC communication with the reader unit is interrupted for a specific period of time (5 sec) or more.

3 Self Diagnosis (finisher)

3.1 Finisher Assembly

E503

Main cause: A communication error has been detected.

Condition of detection:

0003 An error is detected in the communication with the saddle sitcher.

E504

Main cause: The output of the height sensor (PS1) is faulty.

Condition of detection:

0004 The adjustment of the sensor made using a DIP switch is faulty.

E505

Main cause: The backup RAM is faulty.

Condition of detection:

0001 At power-on, the check sum value is found to be faulty.

E512

Main cause: The delivery motor is faulty. The delivery motor clock sensor (PI10) is faulty.

Condition of detection:

0001 At the start of operation, the target number of clock pulses cannot be obtained from the delivery motor clock.

0002 During feeding, clock pulses are absent for a period equivalent of 200 mm.

E530

Main cause: The alignment motor (M3) is faulty. The alignment plate home position sensor (PI6) is faulty.

Condition of detection:

0001 The alignment plate does not leave the alignment plate home position sensor even when the alignment motor has been driven for 2 sec.

0002 The alignment plate does not return to the alignment plate home position sensor even when the alignment motor has been driven for 2 sec.

E531

Main cause: The stapler motor (M6) is faulty. The stapler home position sensor detecting switch (MS7) is faulty.

Condition of detection:

- 0001 The stapler does not leave the stapling home position even when the stapler motor has been driven for 0.5 sec.
- 0002 The stapler does not return to the stapling home position even when the stapler motor has been driven for 0.5 sec.

E532

Main cause: The stapler shift motor (M4) is faulty. The stapler shift home position sensor (PI7) is faulty.

Condition of detection:

- 0001 The stapler does not leave the stapler shift home position sensor even when the stapler shift motor has been driven for 4 sec.
- 0002 The stapler shift home position cannot be detected even when the stapler shift motor has been driven for 4 sec.

E535

Main cause: The delivery motor (M2) is faulty. The swing guide closed detecting switch 2 (MS6) is faulty.

Condition of detection:

- 0001 The swing guide closed detecting switch does not turn on even when the delivery motor is rotated in reverse for 1 sec.

Main cause: The delivery motor (M2) is faulty. The swing guide open sensor (PI18) is faulty.

Condition of detection:

- 0002 The swing guide open detecting sensor does not turn on even when the delivery motor is rotated in reverse for 1 sec.

Main cause: The safety area switch (MS3) is faulty. The swing guide open detecting switch (MS6) is faulty.

Condition of detection:

- 0003 When the tray 1/2 is in the safety area switch OFF position, the swing guide closed detecting switch is found to be off.

E540

Main cause	The tray lift motor (M5) is faulty. The tray lift motor clock sensor 1/2 (PI19/PI20) is faulty. The tray home position sensor (PI8) is faulty.
Condition of detection	
	0001 The ascent operation does not end 15 sec after the tray lift motor is started. The tray home position cannot be detected even when the tray lift motor has been driven for 15 sec.
Main cause	The tray paper limit detecting switch (MS4) is faulty.
Condition of detection	
	0002 The tray upper limit detecting switch is found to be on while the tray is moving up.
Main cause	The tray lifter motor (M5) is faulty. The tray lifter motor clock sensor 1/2 (PI19/PI20) is faulty.
Condition of detection	
	0003 There is no clock pulse from the clock sensor 1/2 for 200 msec or more when the try lifter motor is driven.

E584

Main cause	The feed motor (M1) is faulty. The shutter closed detecting switch (MS4) is faulty.
Condition of detection	
	0001 The shutter closed detecting switch does not turn on even when the feed motor has been rotated in reverse for 1 sec or more.
Main cause	The feed motor (M1) is faulty. The shutter open sensor (PI5) is faulty.
Condition of detection	
	0002 The shutter open sensor does not turn on even when the feed motor is rotated in reverse for 1 sec or more.
Main cause	The safety area switch (MS3) is faulty. The shutter closed detecting sensor (MS4) is faulty.
Condition of detection	
	0003 When the tray 1/2 is in the safety area switch OFF position, the shutter closed detecting switch is found to be off.

3.2 Saddle Stitcher

E5F0

Main cause: The positioning plate motor (M4S) is faulty. The power positioning plate home position sensor (PI7S) is faulty.

Condition of detection:

- 0001 The paper positioning plate home position sensor does not turn on even when the paper positioning plate motor has been driven for 1.25 sec or more.
- 0002 The paper positioning plate home position sensor does not turn off even when paper positioning plate motor has been driven for 1 sec or more.

E5F1

Main cause: The folding motor (M2S) is faulty. The folding motor clock sensor (PI4S) is faulty.

Condition of detection:

- 0001 The number of detention pulses of the folding motor clock sensor drops to a specific value or lower.

E5F2

Main cause: The guide motor (M3S) is faulty. The guide home position sensor (PI13S) is faulty.

Condition of detection:

- 0001 The guide home position sensor does not turn on even when the guide motor has been driven for 0.4 sec or more.
- 0002 The guide home position sensor does not turn off even when the guide motor has been driven for 1 sec or more.

E5F3

Main cause: The alignment motor (M5S) is faulty. The alignment plate home position sensor (PI5S) is faulty.

Condition of detection:

- 0001 The alignment plate home position sensor does not turn on even when the alignment motor has been driven for 0.5 sec or more.
- 0002 The alignment plate home position sensor does not turn off even when the alignment motor has been driven for 1 sec or more.

E5F4

Main cause: The stitch motor (rear, M6S) is faulty. The stitching home position switch (rear, PS2S) is faulty.

Condition of detection:

0001 The stitching home position switch does not turn off even when the stitching motor (rear) is rotated clockwise for 0.5 sec or more.

0002 During jam recovery, the stitching home position switch does not turn on even when the stitching motor (rear) is rotated counter-clockwise for 0.5 sec or more.

E5F5

Main cause: The stitching motor (front, M7S) is faulty. The stitching motor operating home position switch (front, PS4S) is faulty.

Condition of detection:

0001 The stitching home position switch does not turn off even when the stitching motor (front) is rotated clockwise for 0.5 sec or more.

0002 During jam recovery, the stitching home position switch does not turn on even when the stitching motor (front) is rotated counter-clockwise for 0.5 sec or more.

E5F6

Main cause: The paper push-on plate motor (M8S) is faulty. The paper push-on plate home position sensor (PI14S) is faulty.

Condition of detection:

0001 While the paper push-on plate is moving from the leading edge to the home position, the paper push-on plate home position sensor does not turn on even when the paper push-on plate motor has been driven for 0.3 sec or more.

0002 While the paper push-on plate is moving to the leading edge, the paper push-on plate home position sensor does not turn off even when the paper push-on plate motor has been driven for 1.0 sec or more.

Main cause: The paper push-on plate motor (M8S) is faulty. The paper push-on plate leading edge position sensor (PI15S) is faulty.

Condition of detection:

0003 When the paper push-on plate is moving from the leading edge to the home position, the paper push-on plate leading edge sensor does not turn on even when the paper push-on plate motor has been driven for 1.0 sec or more.

Main cause	The paper push-on plate motor (M8S) is faulty. The paper push-on plate motor clock sensor (PIS) is faulty.
Condition of detection	
	0004 The number of detection pulse of the paper push-on plate motor clock sensor is lower than a specific value.
Main cause	The paper push-on plate motor (M8S) is faulty. The paper push-on leading edge position sensor (PI15S) is faulty.
Condition of detection	
	0005 The paper push-on plate leading edge position sensor does not turn on even when the paper push-on plate motor has been driven for 0.3 sec or more after the paper push-on plate home position sensor is turned off.

E5F8

Main cause	The guide home position sensor (PI13S) has a faulty connector.
Condition of detection	
	0001 The connector of the guide home position sensor is found to be disconnected.
	The paper push-on plate home position sensor (PI14) has a faulty connector.
Condition of detection	
	0002 The connector of the paper push-on plate home position sensor is found to be disconnected.
Main cause	The paper push-on plate leading edge sensor (PI15S) has a faulty connector.
Condition of detection	
	0003 The connector of the paper push-on plate leading edge sensor is found to be disconnected.

E5F9

Main cause: The inlet door open detecting switch (MS1S) is faulty. The inlet door sensor (PI9S) is faulty.

Condition of detection:

0001 While the following three photointerrupters for covers have identified that the doors are closed, the inlet door open detention switch identifies the door to be open for 1 sec or more from the start of copying or the start of copier initial rotation.
Inlet door sensor (PI9S)
Front door open sensor (PI2S)
Delivery door open sensor (PI3S)

Main cause: The front door open detecting switch (MS2S) is faulty. The front door open sensor (PS2S) is faulty.

Condition of detection:

0002 While the following three photointerrupters for covers have identified that the doors are closed, the front door open detecting switch identifies the front door to be open for 1 sec or more from the start of copying or the start of copier initial rotation:
Inlet door sensor (P19S)
Front door open sensor (PI2S)
Delivery door open sensor (PI3S)

Main cause: The delivery door open detecting switch (MS3S) is faulty. The delivery door open sensor (PI3S) is faulty.

Condition of detection:

0003 While the following three photointerrupters for covers have identified that the doors are closed, the delivery door open detecting switch identifies the delivery door to be open for 1 sec or more from the start of copying or the start of initial rotation.
Inlet door sensor (PI9S)
Font door open sensor (PI2S)
Delivery door open sensor (PI3S)

4 Self Diagnosis (sorter)

E500	
Main cause	Data communication is faulty.
Condition of detection	The communication between the host machine and the sorter is disrupted. (This error is detected by the host machine.)
E510	
Main cause	The no-sort motor (M6) does not rotate.
Condition of detection	After the motor drive signal has been generated, the input signal of the non-sort motor clock sensor (PI10) does not change within 60 msec.
E525	
Main cause	Auto adjustment of the bin inside paper sensor (S1, S2) is faulty.
Condition of detection	Auto adjustment of the bin inside paper sensor (S1, S2) fails, or the auto adjustment value has an error.
E530	
Main cause	The guide bar swing motor (M3) fails to rotate.
Condition of detection	After the motor drive signal has been generated, the input signal of the guide bar HP sensor (PI3) does not change within 200 msec.
E531	
Main cause	The stapler unit swing motor (M4) fails to rotate. The stapler motor (M5) fails to rotate.
Condition of detection	The input signal from the stapler unit HP switch (MS4) does not change for 1000 msec or more. While the stapler unit is rotating clockwise, the home position is not detected within 600 msec. In addition, the home position cannot be detected within 600 msec when the motor is rotated in reverse.

E540

Main cause	The bins shift motor (M1) fails to rotate.
Condition of detection	After the motor drive signal has been generated, the operation does not end within a period 4 times a specific period or less: Period: 20000 msec during initialization 2000 msec during non-initialization The clock signal from the bin shift motor clock sensor (PI1) is absent for 250 msec or more. The input signal from the lead cam HP sensor (PI2) does not change for 200 msec.

5 Self Diagnosis (PDL Board)

E677

Main cause

The connection between the host machine and the PDL board is faulty. The system software is faulty. The hard disk is faulty. The PDL board is faulty. The system controller PCB of the host machine is faulty.

Condition of detection

0001 DPRAM size error
In communication for initialization, the DPRAM size returned by the PDL board to the host machine has an error.
(The host machine is aware of the DPRAM size in advance; the DPRAM is a dual-port RAM used for communication between the host machine and the PDL board, and is mounted on the PDL board.)

0002 Initialization communication error
In communication for initialization, the contents of communication returned by the PDL board to the host machine have an error and, therefore, communication cannot be established.

0004 PDL board disconnection
After the connection of the PDL board is recognized at power-on, the PDL board is disconnected.
During power-up, monitoring is executed at intervals of 2 min; however, if the CPU is not on (sleep state or the like), no error will be identified even if the PDL board is discontented.
If the PDL board is disconnected in sleep state, the absence of the PDL board will be recognized at the start of the CPU.

0080 Communication error
An error in communication has occurred after the communication between the host machine and the PDL board has been established.
For communication related to the sleep mode (power control) of the host machine, the response from the PDL board is disrupted for 2 min or more.

Main cause	The connector is disconnected. The cooling fan is faulty. The PDL board is faulty. The host machine is faulty. The system controller PCB is faulty.
Condition of detection	0101 cooling fan error The rotation of the cooling fan slows down or the absence (disconnection) of the fan is detected. The revolution of the fan is monitored at all times as long as the fan is rotating. (The cooling fan keeps rotating while the main switch remains on.)

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